

EXHIBIT 6

Mark Krekeler, Ph.D.

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

IN RE: JOHNSON & JOHNSON : MDL NO. 2592
TALCUM POWDER PRODUCTS : 16-2738 (FLW) (LGH)
MARKETING, SALES PRACTICES :
AND PRODUCTS LIABILITY :
LITIGATION :
: THIS DOCUMENT RELATES TO:
: ALL CASES :
:

Videotaped Deposition of

MARK KREKELER, Ph.D.

Taken: By the Defendants
Pursuant to Notice

Date: January 25, 2019

Time: Commencing at 9:16 a.m.

Place: Hampton Inn
375 South College Avenue
Oxford, Ohio 45056

Before: Susan M. Gee, RMR, CRR
Notary Public - State of Ohio
and
Melinda Sindiong, CLVS

Mark Krekeler, Ph.D.

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17 WILENTZ, GOLDMAN & SPITZER, P.A.			17 1 11/16/18 Rule 26 Expert Report of		
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19 90 Woodbridge Cener Drive			19 2 1/17/19 Rule 26 Addendum to the		
20 Suite 900			20 Expert Report of Mark Krekeler, Ph.D. 13		
21 Woodbridge, New Jersey 07095			21 3 IRSST report R-755 82		
22 (732) 865-6066			22 4 IC 8757 Bureau of Mines Information		
23 dlapinski@wilentz.com			23 Circular/1977 86		
24			24 5 IARC Monographs on the Evaluation of		
25 On behalf of Defendant Johnson & Johnson:			25 Carcinogenic Risks to Humans, Vol. 93 91		
26 DRINKER BIDDLE & REATH LLP			26 6 U.S. Department of Health and Human		
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1	VIDEOGRAPHER: We are now on the record. My name is Melinda Sindiong, CLVS. I'm videographer for Golkow Litigation Services.			
2	Today is January 25th, 2019. The time is 9:16. The video deposition is being held in Oxford, Ohio, in the matter of Johnson & Johnson Talcum Powder Products Marketing Sales Liability Litigation. This is for the United States District Court of the District of New Jersey.			
3	The deponent is Mark Krekeler, M.D.			
4	Will counsel please identify yourselves and the parties you represent?			
5	MS. SCOTT: My name is Carmen Scott. I'm with Motley Rice, for the plaintiffs.			
6	MS. O'DELL: Leigh O'Dell, Beasley Allen, for the plaintiffs.			
7	MS. EMMEL: Jennifer Emmel, Beasley Allen, for the plaintiffs.			
8	MR. LAPINSKI: Daniel Lapinski, Wilentz law firm, for the plaintiffs.			
9	MR. FROST: Jack Frost, Drinker Biddle & Reath, on behalf of Johnson & Johnson.			
10	MS. ROSE: Nina Rose, Skadden, Arps, on behalf of Johnson & Johnson.			
11	MR. FERGUSON: Ken Ferguson, Gordon &			
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<p>1 A. Very good.</p> <p>2 Q. So we just need to make sure that, you</p> <p>3 know, we're verbalizing everything.</p> <p>4 Second thing is, and I guarantee we'll</p> <p>5 get in trouble for this at some point. It's very hard</p> <p>6 for the court reporter to write down when both of us are</p> <p>7 talking at the same time. I'm not saying we're doing it</p> <p>8 in a rude way but just normal human conversation.</p> <p>9 Eventually, you'll pick up what the end of my question</p> <p>10 is. I'll pick up the end of your answer, and we'll just</p> <p>11 start naturally talking over each other. We've got to</p> <p>12 be really careful about that, you know, make sure she</p> <p>13 can write it down.</p> <p>14 At some points during the deposition,</p> <p>15 your counsel may object or other people in the room may</p> <p>16 object. Allow time to give counsel, you know, to put</p> <p>17 their objections on. Once they're done, unless you're</p> <p>18 instructed otherwise by your counsel, you have to answer</p> <p>19 my question.</p> <p>20 The other thing is, if you answer my</p> <p>21 question, I'm going to understand you assumed it or</p> <p>22 understood it. So if you don't understand what I'm</p> <p>23 asking, you need clarification, let me know. If there</p> <p>24 is, you know, something you need for me to work out, I'd</p> <p>25 rather work it out than have you answer something that,</p>	<p>1 just say it again and agree on it or -- I'm unclear.</p> <p>2 I've never done this before.</p> <p>3 BY MR. FROST:</p> <p>4 Q. Sure. So to the extent we can, just</p> <p>5 listen to my question and answer the question, yeah, as</p> <p>6 I've asked it. What shows up on the screen is called</p> <p>7 phonetic, so sometimes the words converted over by the</p> <p>8 computer will be incorrect, and ultimately, when they</p> <p>9 come and transfer it for the final transcript, it will</p> <p>10 change.</p> <p>11 So these are sort of there as a guide, if</p> <p>12 we can't remember what we're talking about a couple</p> <p>13 minutes ago, to look back. But this is not the official</p> <p>14 record. The official record will be what's on the</p> <p>15 video, and then, ultimately, what's in the transcript,</p> <p>16 which might end up being a little different than what's</p> <p>17 on the screen.</p> <p>18 A. Okay. And because -- so a third party</p> <p>19 would go and transcribe what's on the video?</p> <p>20 Q. So I'm not sure at the end, yeah.</p> <p>21 A. So if there's something garbled on here,</p> <p>22 someone else does that?</p> <p>23 Q. Yes. That's correct.</p> <p>24 A. So they don't come back to me or --</p> <p>25 Q. No. You don't need to worry about that.</p>
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<p>1 you know, you and I are talking at different places.</p> <p>2 The only other thing, too, I don't want</p> <p>3 you to guess here today, and if you're guessing or</p> <p>4 making an estimate, just let us know. And, you know,</p> <p>5 but if it's a wild guess, I don't know, I don't</p> <p>6 remember, those are perfectly fine answers.</p> <p>7 And other than that, if you need a break</p> <p>8 at any time, let us know. If there's a question</p> <p>9 pending, you've got to answer the question first, but</p> <p>10 we're here on your schedule, so -- and we'll try to</p> <p>11 break every hour, hour and a half or so, but if you need</p> <p>12 to break in between, you know, just let us know, and</p> <p>13 we'll stop.</p> <p>14 A. Can I ask a question?</p> <p>15 Q. Sure.</p> <p>16 A. So I've never done this before. I've</p> <p>17 never been deposed, and I noticed early on, when the</p> <p>18 videographer was making some statements, that the</p> <p>19 statements that I heard were not recorded accurately on</p> <p>20 this. So the word was "demotion."</p> <p>21 MS. SCOTT: You don't need to worry about</p> <p>22 that.</p> <p>23 A. So but my question is, is if I go -- if I</p> <p>24 use this to read your question, how do I know a word's</p> <p>25 not -- how do we make sure that word is right? Do we</p>	<p>1 That's done somewhere else.</p> <p>2 A. Okay. Yeah. I don't -- I don't know.</p> <p>3 Q. No. That's okay. It's a fair question.</p> <p>4 But --</p> <p>5 VIDEOGRAPHER: Sorry. If I can interject</p> <p>6 as well, you're talking with your hands, and it</p> <p>7 does get in the shot.</p> <p>8 MR. FROST: Oh, mine does?</p> <p>9 VIDEOGRAPHER: Yes.</p> <p>10 THE WITNESS: Okay. Sorry.</p> <p>11 VIDEOGRAPHER: Thank you.</p> <p>12 MR. FROST: All right. So if I can mark</p> <p>13 a couple exhibits to begin. I'll mark this as</p> <p>14 Exhibit 1.</p> <p>15 (Exhibit 1 was marked for</p> <p>16 identification.)</p> <p>17 MR. FROST: I'll mark this as Exhibit 2.</p> <p>18 THE WITNESS: Does it matter which copy?</p> <p>19 MS. SCOTT: You can take a look at</p> <p>20 whichever you're more comfortable with. They're</p> <p>21 the same.</p> <p>22 MR. FROST: I imagine they're the same,</p> <p>23 right?</p> <p>24 (Exhibit 2 was marked for</p> <p>25 identification.)</p>

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<p>1 BY MR. FROST:</p> <p>2 Q. All right. In front of you marked as</p> <p>3 Exhibits 1 and 2 are your expert report that's dated</p> <p>4 November 16th, 2018, and then Exhibit 2 is your</p> <p>5 supplemental report dated January 17th, 2019; is that</p> <p>6 correct?</p> <p>7 A. Yes.</p> <p>8 Q. Are these the only two reports that</p> <p>9 you've written in this case?</p> <p>10 A. Yes.</p> <p>11 Q. Now, you understand you've been</p> <p>12 designated by the plaintiffs in this case in the Johnson</p> <p>13 & Johnson talc MDL?</p> <p>14 A. Yes.</p> <p>15 Q. Okay. Can you explain to me what, or</p> <p>16 define what your area of expertise is?</p> <p>17 A. Yes. So my undergraduate degree was in</p> <p>18 geology, and since my freshman year, I've been working</p> <p>19 with clay materials and clay intervals. My degree is</p> <p>20 in -- my undergraduate degree is a bachelor's of science</p> <p>21 in geology, and so that entailed field work. And,</p> <p>22 actually, I think since my freshman year, I've been</p> <p>23 doing powder x-ray diffraction. My master's was on,</p> <p>24 also, a clay rich rock, bentonite, so -- and then in --</p> <p>25 I finished that degree in '98.</p>	<p>1 phyllosilicates as well. And, basically, I worked with</p> <p>2 industrial mineral materials, mine materials, and then</p> <p>3 my time at Miami University, I've also worked with</p> <p>4 synthetic minerals and natural minerals.</p> <p>5 So my training as a Ph.D. student was to</p> <p>6 look at the phyllosilicate minerals as a whole. So</p> <p>7 mineralogy has evolved significantly in that we think of</p> <p>8 minerals as sort of a system, and we look at things at</p> <p>9 how they're interrelated. And that's -- so, basically,</p> <p>10 I've had some -- my degree is in geotechnical</p> <p>11 engineering and environmental earth science, so I have a</p> <p>12 few engineering classes. And then I've collaborated and</p> <p>13 worked with several mineral companies. My Ph.D. was</p> <p>14 sponsored by a mineral company, in part.</p> <p>15 Q. So long story short, would you define</p> <p>16 your area of expertise as mineralogy?</p> <p>17 A. Yes.</p> <p>18 Q. Okay. And the two reports in front of</p> <p>19 you, do those reflect all the opinions you plan to give</p> <p>20 in this case or intend to give in this case?</p> <p>21 A. Well, again, I'm legally not familiar</p> <p>22 with the process, but I think I -- currently, this is my</p> <p>23 opinions. If something new comes up and I'm asked, I</p> <p>24 would...</p> <p>25 Q. Okay. I guess a better way to ask that</p>
<p>1 Then my Ph.D. was in mineralogy and</p> <p>2 specifically phyllosilicate mineralogy and looking at</p> <p>3 the impurities and materials associated with</p> <p>4 phyllosilicates. My dissertation was on</p> <p>5 palygorskite-sepiolite minerals and smectite minerals.</p> <p>6 My Ph.D. advisor was Steve Guggenheim, who essentially</p> <p>7 is the North American expert in crystallography for</p> <p>8 phyllosilicates.</p> <p>9 And, then, so I finished that degree in</p> <p>10 2003. Throughout my degrees, I think my first</p> <p>11 consulting job was a project with Amoco when I was an</p> <p>12 undergrad doing x-ray diffraction, looking at clays from</p> <p>13 Trinidad through my advisor, Warren Huff. But through</p> <p>14 that period of time, I did occasional consulting</p> <p>15 projects, largely with powder x-ray diffraction and</p> <p>16 sometimes electron microscopy.</p> <p>17 Then I did not do a postdoc. There were</p> <p>18 two mineralogy positions available nationwide when I</p> <p>19 graduated. My graduation year was 2003. I then got one</p> <p>20 of those positions at George Mason University, and I was</p> <p>21 hired in a department of environmental science and</p> <p>22 policy. And my research there, I was specifically</p> <p>23 teaching mineralogy. Then my research was centered</p> <p>24 around mineralogy.</p> <p>25 I produced a few patents relating to</p>	<p>1 question --</p> <p>2 A. Sorry. I'm unclear. I'm not familiar.</p> <p>3 Q. Yeah. That's okay. As we sit here</p> <p>4 today, do you intend to offer any opinions in this case</p> <p>5 that aren't reflected in either of these two reports?</p> <p>6 A. No. The reports are what I am using.</p> <p>7 Q. And were you asked to render any reports</p> <p>8 by your counsel that you did not or are not included in</p> <p>9 those reports?</p> <p>10 MS. SCOTT: Objection. You can answer.</p> <p>11 BY MR. FROST:</p> <p>12 Q. You can answer.</p> <p>13 A. Oh, I can answer? So, if I remember</p> <p>14 correctly, with the deposition notice, it was requested</p> <p>15 that reports or documents I prepared relating to, I</p> <p>16 think, all talc cases were requested. So there's one</p> <p>17 report that I gave to them from another case that I'm</p> <p>18 involved in.</p> <p>19 Q. Okay. So you're currently involved in</p> <p>20 another talc case or is this an older case?</p> <p>21 A. This is a current case.</p> <p>22 Q. And it's a talc case?</p> <p>23 A. It is a talc-related case, yes.</p> <p>24 Q. Is it a case against Johnson & Johnson?</p> <p>25 A. I believe it's a case against Imerys.</p>

5 (Pages 14 to 17)

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<p>1 Q. Against Imerys? Do you know what the 2 case is called or where it's venued?</p> <p>3 A. I don't remember offhand. The law firm 4 is Waters & Kraus.</p> <p>5 Q. That's who retained you?</p> <p>6 A. Yes.</p> <p>7 Q. Do you know what state it's in?</p> <p>8 A. The law firm is in Texas. I think the 9 case is in Texas.</p> <p>10 Q. And what have you been asked to do in 11 that case?</p> <p>12 MS. SCOTT: I'm going to object to the 13 extent that I'm not aware of what his role is in 14 that case.</p> <p>15 MR. FROST: Sure.</p> <p>16 MS. SCOTT: And I'm not sure he knows 17 what's going on and, you know, the extent of 18 the -- whether he's been disclosed in that case 19 or not.</p> <p>20 MR. FROST: Okay.</p> <p>21 MS. SCOTT: So I'm going to object to any 22 questions on that.</p> <p>23 MR. FROST: All right. We'll reserve our 24 right to come back.</p> <p>25 MS. SCOTT: Sure.</p>	<p>1 cite throughout the report?</p> <p>2 A. Yes.</p> <p>3 Q. The piece of literature, things like 4 that?</p> <p>5 A. Yes.</p> <p>6 Q. Okay. Other than documents, books, 7 literature, et cetera, that are already included in your 8 report, have you brought anything else with you today?</p> <p>9 A. No. I believe just what is in the report.</p> <p>10 Q. Okay. We're also going to probably send 11 a request for, you know, a copy of the report written on 12 the other case as well. It seems like it was turned 13 over to counsel.</p> <p>14 MS. O'DELL: No. You misunderstood. 15 It's not been turned over to counsel.</p> <p>16 MR. FROST: It hasn't been turned over to 17 you guys.</p> <p>18 MS. O'DELL: We don't have any information about that case.</p> <p>19 MR. FROST: Oh, okay.</p> <p>20 MS. O'DELL: Yeah. So if you have any questions about that, you need to talk to Waters 21 & Kraus or whoever else is involved.</p>
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<p>1 BY MR. FROST:</p> <p>2 Q. Have you brought that report that you 3 drafted in that case with you today?</p> <p>4 A. I don't know.</p> <p>5 Q. Okay. Did you bring anything with you -- 6 I'll start. So there seems to be a table of stuff next 7 to you. Is that a fair way to describe that?</p> <p>8 A. Yes.</p> <p>9 Q. And what, generally, is that stuff? Like 10 what's in the binders and things like that?</p> <p>11 A. So, generally, those are documents that 12 were provided when I requested them, and those documents 13 are from the companies.</p> <p>14 Q. Are those all the documents that are 15 listed in your materials-relied-upon list at the end of 16 your report?</p> <p>17 A. Yes.</p> <p>18 Q. Is there anything in those binders that 19 isn't otherwise reflected on the list in your reports?</p> <p>20 A. I'm sorry?</p> <p>21 Q. I can reask it if it's easier.</p> <p>22 A. Is there anything in those binders that 23 isn't otherwise reflected on the list? I have books 24 that are also included in the report.</p> <p>25 Q. Okay. Those are the various books you</p>	<p>1 BY MR. FROST:</p> <p>2 Q. So before, when you said you'd given the 3 report to counsel, you're talking about Waters & Kraus, 4 not --</p> <p>5 A. I don't recall specifics.</p> <p>6 Q. All right. Have you turned that report 7 at all over to any of your attorneys who are here today 8 or anybody who works for them, their law firms, if you 9 can recall?</p> <p>10 A. I don't remember specifics.</p> <p>11 Q. Okay. Do you recall when you were 12 retained in that case?</p> <p>13 A. In the other case?</p> <p>14 Q. Yes.</p> <p>15 A. It was about the same time as this case.</p> <p>16 Q. Do you recall when that was?</p> <p>17 A. Basically, I want to say it was towards 18 the end of December of 2017, but -- so that's when we 19 talked, and then I think it was like late January, maybe 20 February, when I actually started reviewing documents 21 for that case.</p> <p>22 Q. Have you generated any invoices for your 23 work in this case yet?</p> <p>24 A. I'm sorry. Are you referring to --</p> <p>25 Q. For this, what we're here for today, the</p>

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<p>1 Johnson & Johnson MDL case. 2 A. Yes. I'm up to date with invoices. 3 Q. And did you bring any of those invoices 4 with you? 5 MS. SCOTT: Counsel, those were provided 6 previously about a week ago by email. 7 MR. FROST: All right. 8 BY MR. FROST: 9 Q. But other than that, there's nothing, no 10 additional documents or invoices? 11 A. Right. There's no outstanding billing or 12 anything -- 13 Q. Yeah. 14 A. -- like that. 15 Q. Okay. 16 A. Yeah. We're all caught up. 17 Q. All right. Turning back to the reports 18 that are in front of you as Exhibits 1 or 2, are these 19 reports complete, as far as you're concerned? 20 A. To the best of my knowledge, they're 21 complete, based on what I was provided to review. 22 Q. And do you believe what's reflected in 23 those reports is accurate? 24 A. I believe that my opinions are accurate. 25 The data as presented as findings are as they are</p>	<p>1 A. Is it fair to say that, effectively, the 2 opinions you're rendering here are limited to review of 3 the geologic deposits utilized by Johnson & Johnson 4 and -- it's kind of garbled. 5 Q. Yeah. And Imerys. 6 A. And to create talcum powder. So, yes, I 7 reviewed those materials. 8 Q. Okay. And you're not here to opine about 9 anything outside of those geological deposits and the 10 mining practices, et cetera, that were going on at those 11 areas? 12 MS. SCOTT: Objection. 13 A. So the nature of mineralogy, as I alluded 14 to earlier, is very systematic, right? So it's not the 15 same deposit. It's not the same deposit, but there's 16 Caledonia. New Caledonia is a terrain that has a lot of 17 talc in it, that has a lot of nickel in it, and so, 18 essentially, the geologic knowledge as a whole, 19 essentially, I'm relying on my educational base, my 20 research base, things like that. So being aware of the 21 geology of talc and the mineralogy of talc, geochemistry 22 of talc through global settings is critical to evaluate 23 any subset of data relating to talc and associated 24 rocks.</p>
<p>1 interpreted by the company. So when you say -- again, 2 I'm unexperienced. 3 Q. Sure. 4 A. So when you say "accurate," I don't think 5 some of the report, some of the findings are 6 scientifically accurate, based on the analytical 7 methods. So... 8 Q. Are you talking about some of your 9 findings? I'm asking sort of what your ultimate 10 opinions and your findings in this case. Do you believe 11 that what you've opined to in this case is accurate in 12 these reports? 13 A. So is my opinion -- 14 Q. Yes. 15 A. -- accurate? 16 Q. Yes. 17 A. Yes, I believe my opinion is accurate. 18 Q. Is there anything, before we get started 19 going through those opinions, that you want to change or 20 amend? 21 A. No. 22 Q. And is it fair to say that, effectively, 23 the opinions you're rendering here are limited to review 24 of the geologic deposits utilized by Johnson & Johnson 25 and Imerys to create talcum powder?</p>	<p>1 BY MR. FROST: 2 Q. I'll ask it a sort of different way. 3 I'll break it down. You didn't do any testing here of 4 any product, right? 5 A. I was not asked to do any testing. 6 Q. Okay. And you're not going to render any 7 opinions about what causes disease, anything of that 8 nature? 9 A. Correct. I am not a medical expert. I 10 am not an environmental health expert. 11 Q. And you're not going to render any 12 opinions about what level of exposure to any particular 13 metal or contaminant can cause disease? 14 A. Again, I would defer for details to 15 environmental health experts and medical experts. 16 Q. You're not going to render any opinion 17 that use of Johnson & Johnson talcum powder causes 18 ovarian cancer, right? 19 A. So I'm sorry. I am not an expert in the 20 molecular mechanisms of carcinogenicity, if I said that 21 correct. I don't know. I'm not a medical person. So, 22 no. 23 Q. All right. Looking at Exhibit 2, which 24 is the addendum report, why did you draft this addendum? 25 A. New materials became available.</p>

7 (Pages 22 to 25)

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<p>1 Q. When were you asked to draft the 2 addendum? 3 A. I think when Longo had his supplemental, 4 and then I can't remember exactly when, but what really 5 caught my eye was this testing where they used 6 .1 milligrams of a sample, and that's not representative 7 in any way, and then they use a silver membrane. 8 Q. I'll stop you here, because we'll be here 9 for a very long time. 10 A. Okay. 11 Q. So the question was: When were you asked 12 to draft the report? 13 A. I'm sorry. I'm sorry. You're right. I 14 got distracted. It was in January sometime. 15 Q. And if you look at the second paragraph 16 of the report, it states, "After I submitted my 17 preliminary report on November 16, 2018, I reviewed 18 additional documents provided by Johnson & Johnson and 19 Imerys through the course of this litigation as well as 20 documents produced after submitting my report." Is that 21 correct? 22 A. Yes. 23 Q. If you turn to pages 4 -- I'm sorry, page 24 5 of the report. You list the supplemental materials 25 and data considered?</p>	<p>1 A. I might have been confused with the Longo 2 title. It says, "Analysis of Johnson & Johnson's 3 historical product," so that might be the source of 4 the... 5 Q. Do you know if there are anything else or 6 any other changes that you'd like to make to either the 7 supplemental or the original report? 8 MS. SCOTT: Objection. Asked and 9 answered. 10 BY MR. FROST: 11 Q. You can answer. 12 A. Do I -- 13 Q. Yeah. Do you know if there are any other 14 typos or anything else you'd want to correct in either 15 of the two reports? 16 A. I think there are a few typos in the 17 report, or I'm, you know, I'm not perfect so... 18 Q. We talked about, sort of, what's in the 19 binders over there and in the tubs. We'll start with 20 the binders, which are the documents. Did plaintiffs' 21 counsel provide all of the documents you relied on from 22 both Imerys and Johnson & Johnson in this case? 23 MS. SCOTT: Objection. 24 A. I requested documents from the lawyers to 25 review.</p>
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<p>1 A. Yes. 2 Q. Am I also correct, you only list Imerys 3 documents as the additional materials reviewed? 4 A. Yes. 5 Q. Okay. So you, in fact, did not actually 6 review any additional Johnson & Johnson documents to 7 create this addendum; is that correct? 8 MS. SCOTT: Objection. 9 A. I don't remember specifically. That may 10 be a typo. I think I -- I think it's likely that I 11 looked at some Johnson & Johnson documents but only 12 ended up focusing on these others. 13 BY MR. FROST: 14 Q. Do you know what additional Johnson & 15 Johnson documents -- 16 A. I don't. I don't remember. 17 Q. Okay. And I take it because they didn't 18 make it into the report, it's not something you're 19 relying on? 20 MS. SCOTT: Objection. 21 A. I don't know. 22 BY MR. FROST: 23 Q. Are there any other typos -- 24 A. So I think -- 25 Q. Go ahead.</p>	<p>1 BY MR. FROST: 2 Q. What did you request from the lawyers? 3 A. I requested any documents relating to the 4 mineralogy, the geology, things such as coring, x-ray 5 diffraction, bulk chemical tests, electron microscopy, 6 anything relating to, essentially, problems in 7 manufacturing or things that are related to how well 8 audits, for example -- audits would be a good example of 9 something that would be a third-party objective thing, 10 and I think there's, you know, there's an audit in here, 11 and any, any materials that would give sort of a big, 12 big picture of the situation at hand. 13 Q. Did you ever ask to have access to all 14 the documents so you could perform searches yourself? 15 A. I don't remember. I remember I reviewed 16 a lot of, a lot of documents, but I don't remember if I 17 specifically asked that. I asked for things relating to 18 what I just said. 19 Q. Did you ever run any searches against any 20 documents to see if there's anything additional to what 21 was provided to you? 22 MS. SCOTT: Object to form. You can 23 answer. 24 A. What do you mean by "search"? So I 25 don't -- it was my understanding that -- so this is sort</p>

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<p>1 of a closed system that, essentially, there's the 2 documents that the company produces. If I were to 3 search for something else, I don't necessarily know if 4 that's from the company, right, or that's my thought. 5 So I did not -- I didn't do any additional searches.</p> <p>6 BY MR. FROST:</p> <p>7 Q. So you just relied on the documents as 8 provided to you by plaintiffs' counsel?</p> <p>9 A. Yes.</p> <p>10 MS. SCOTT: Objection.</p> <p>11 A. For these, for the documents that were 12 used.</p> <p>13 BY MR. FROST:</p> <p>14 Q. And you have no way of knowing whether or 15 not they've given you a complete set of every document, 16 correct, that hits the categories you asked for?</p> <p>17 MS. SCOTT: Objection.</p> <p>18 A. I think it's very representative of a 19 set. But, I mean, as I understand, there's, you know, 20 an enormous amount of data, as there should be, and that 21 is -- that would be expected, but, you know, I've 22 reviewed what was requested.</p> <p>23 BY MR. FROST:</p> <p>24 Q. You reviewed what was provided, not what 25 was requested, correct?</p>	<p>1 There's a lot of data, as I understand it. I don't 2 think it's reasonable to review every document. 3 Unfortunately, I'm one person, and if there's hundreds 4 of thousands of pages of documents, yeah, I don't think 5 any single person can review those in a reasonable 6 manner.</p> <p>7 BY MR. FROST:</p> <p>8 Q. So you don't think it's important, as an 9 expert giving opinions about the overall mining and 10 sampling and testing practices of Johnson & Johnson, to 11 have looked at or at least had access to the complete 12 set of documents?</p> <p>13 MS. SCOTT: Objection.</p> <p>14 A. I think it's important to have a 15 representative set, and that representative -- you know, 16 so -- you know, I didn't look at one document. I didn't 17 look at a few documents. You know, here's Hopkins' 18 deposition, for example. There's all kinds of documents 19 in that. There's a lot. There is a lot, but it's my 20 expert opinion that the amount of documents that I 21 reviewed were adequate to arrive at my conclusions.</p> <p>22 BY MR. FROST:</p> <p>23 Q. And, again, that's solely based on the 24 set of documents that was compiled for you by 25 plaintiffs' counsel in this case given to you, which you</p>
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<p>1 A. What was provided that I requested from 2 them.</p> <p>3 Q. And you don't know whether or not -- you 4 have no way of telling, sitting here, whether or not 5 you've been given the complete record, correct?</p> <p>6 MS. SCOTT: Objection. Asked and 7 answered. You can answer if you can.</p> <p>8 A. I think it's, I think it's very 9 representative. So I found examples where asbestos and 10 contaminate -- essentially where asbestos was 11 undetected. You know, I looked at a wide variety of 12 things.</p> <p>13 BY MR. FROST:</p> <p>14 Q. But you would agree with me it's a 15 representative set as chosen to be given to you by your 16 counsel?</p> <p>17 MS. SCOTT: Objection.</p> <p>18 A. I think it's representative.</p> <p>19 BY MR. FROST:</p> <p>20 Q. You have no way of knowing what else 21 might exist, correct?</p> <p>22 MS. SCOTT: Objection. Asked and 23 answered. You can answer.</p> <p>24 A. So, yeah, there could be more bad reports 25 out there. There could be more good reports out there.</p>	<p>1 don't know is complete or not, correct?</p> <p>2 MS. SCOTT: Objection.</p> <p>3 A. I believe it is a representative set of 4 documents, but I did rely on what they provided as 5 that's what I requested. I requested the documents, as 6 I previously indicated in the answer.</p> <p>7 BY MR. FROST:</p> <p>8 Q. So you keep calling this a representative 9 set, but how can you make a determination if a set is 10 representative if you hadn't actually looked at or had 11 access to the full set of documents?</p> <p>12 MS. SCOTT: Objection.</p> <p>13 A. It's my expert opinion that's a -- it's a 14 reasonable amount of documents. There's, you know --</p> <p>15 BY MR. FROST:</p> <p>16 Q. So you're basing the representativeness 17 off of the sheer size of the pile of documents on the 18 table?</p> <p>19 MS. SCOTT: Objection.</p> <p>20 A. It's what I think is a representative 21 population of documents. I mean, there's -- there are a 22 lot of documents, but I've -- and I've looked at a lot 23 of documents, and I've arrived at my professional 24 opinion based on the review of those documents.</p>

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<p>1 BY MR. FROST:</p> <p>2 Q. Would it change your opinion --</p> <p>3 A. I can't ask a question, right?</p> <p>4 Q. No.</p> <p>5 A. Okay. All right. Yeah.</p> <p>6 Q. Would it change your opinion if you knew</p> <p>7 that the set of documents provided to you by plaintiffs'</p> <p>8 counsel only represents a portion of the story and there</p> <p>9 are hundreds and possibly thousands of additional</p> <p>10 documents that weren't provided to you by counsel?</p> <p>11 MS. SCOTT: Objection.</p> <p>12 A. So those documents would not negate the</p> <p>13 findings of the report. So, for example, if there was</p> <p>14 an additional document that said talc was undetected, it</p> <p>15 wouldn't negate the findings of the materials starting</p> <p>16 on page 14.</p> <p>17 BY MR. FROST:</p> <p>18 Q. Well, that's -- I'm glad you brought that</p> <p>19 up, because we'll get to those at the end of the</p> <p>20 deposition, because I think you were actually not</p> <p>21 provided some very important documents regarding that</p> <p>22 chart, but we'll turn back to that later when we start</p> <p>23 going through the report.</p> <p>24 A. Okay.</p> <p>25 Q. But it wouldn't change your opinion at</p>	<p>1 on page 5 of the shorter document.</p> <p>2 Q. Okay. And these are all Longo expert</p> <p>3 reports, correct, Longo testing reports?</p> <p>4 A. Yes.</p> <p>5 Q. Did you ever see any draft reports from</p> <p>6 any other experts in these cases before you finished</p> <p>7 yours?</p> <p>8 A. No, I did not.</p> <p>9 Q. Have you reviewed any other expert</p> <p>10 reports given in any talcum powder cases other than this</p> <p>11 one? You know, for example, were you provided any</p> <p>12 expert reports from other cases against Johnson &</p> <p>13 Johnson?</p> <p>14 A. I'm trying to think about the other case</p> <p>15 for a moment. I don't remember.</p> <p>16 Q. And have you reviewed any deposition or</p> <p>17 trial transcripts in either preparation of your report</p> <p>18 or to prepare for today's deposition?</p> <p>19 A. Yes.</p> <p>20 Q. What depositions have you reviewed?</p> <p>21 A. Hopkins.</p> <p>22 Q. I guess I'll ask it a different way.</p> <p>23 Other than the ones that are already reflected in your</p> <p>24 report, have you reviewed any depositions of any other</p> <p>25 experts in talcum powder cases, any other, you know,</p>
<p style="text-align: center;">Page 35</p> <p>1 all to know that you were only given a selection of</p> <p>2 documents that supported plaintiffs' theories in this</p> <p>3 case?</p> <p>4 MS. SCOTT: Objection. Asked and</p> <p>5 answered.</p> <p>6 A. No. My opinion remains unchanged.</p> <p>7 BY MR. FROST:</p> <p>8 Q. And, again, it wouldn't change your</p> <p>9 opinion if you knew that there are documents that</p> <p>10 specifically refute some of the findings that you've</p> <p>11 relied on in these reports?</p> <p>12 MS. SCOTT: Objection.</p> <p>13 A. Again, my opinion remains unchanged. The</p> <p>14 data present demonstrates that there was asbestos</p> <p>15 materials and metals materials.</p> <p>16 BY MR. FROST:</p> <p>17 Q. Have you reviewed any reports from other</p> <p>18 experts in this case?</p> <p>19 A. Yes.</p> <p>20 Q. We know you reviewed Longo. You</p> <p>21 mentioned that in the report. Anybody else other than</p> <p>22 Dr. Longo?</p> <p>23 A. Not -- let me look here. So the expert</p> <p>24 reports are listed on page 97, and there are four of</p> <p>25 those. And then the expert report, there's one listed</p>	<p style="text-align: center;">Page 37</p> <p>1 other than --</p> <p>2 A. Not that I remember.</p> <p>3 Q. -- Dr. Downey, Dr. Hopkins?</p> <p>4 A. I don't remember.</p> <p>5 THE WITNESS: Can we take a little break?</p> <p>6 MR. FROST: Sure.</p> <p>7 VIDEOGRAPHER: We're now going off</p> <p>8 record. The time is 9:53.</p> <p>9 (A recess was taken from 9:53 to 10:04.)</p> <p>10 VIDEOGRAPHER: We are now back on record</p> <p>11 and the time is 10:04.</p> <p>12 BY MR. FROST:</p> <p>13 Q. All right. Before going on the break, we</p> <p>14 talked about whether or not you'd read any depositions</p> <p>15 of any other experts in these cases. Has plaintiffs'</p> <p>16 counsel ever discussed with you the testimony of any</p> <p>17 other experts in these cases?</p> <p>18 MS. SCOTT: Objection.</p> <p>19 MS. O'DELL: I would instruct the</p> <p>20 witness -- I'm sorry. Instruct the witness not</p> <p>21 to discuss anything that's been discussed or</p> <p>22 communicated with plaintiffs' counsel.</p> <p>23 MR. FROST: Let's mark the record. I</p> <p>24 disagree with that assumption because, you know,</p> <p>25 I believe any discussion of depositions in these</p>

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<p>1 cases is discoverable under the federal rules, 2 but I'll move on. All right.</p> <p>3 BY MR. FROST:</p> <p>4 Q. Was there anything you asked plaintiffs' 5 counsel to provide for you in this case to help prepare 6 your reports that you were not given?</p> <p>7 A. I'm sorry. Can you just say that again?</p> <p>8 Q. Sure. Was there anything you asked 9 plaintiffs' counsel to provide you in preparation of 10 your report that you were not given or you didn't 11 receive?</p> <p>12 A. No. I believe they gave me 13 representative materials of what I requested. I'm not 14 sure, but I also have the materials that I rely on. So 15 like the, you know, reviews in mineralogy books and 16 things like that are in the reliance list, but I 17 acquired those. They did not produce those.</p> <p>18 Q. Okay. That was actually my next question 19 is that the stuff that's under your reliance material 20 list, is that things that you independently found 21 yourself or that were provided to you by counsel?</p> <p>22 A. Yeah, yeah. Those are things I found.</p> <p>23 Q. Were any of the articles --</p> <p>24 A. Those --</p> <p>25 Q. I'm sorry?</p>	<p>1 reports or were they just provided to you and then you 2 included them in your final opinion paper?</p> <p>3 A. The chart?</p> <p>4 MS. SCOTT: Objection.</p> <p>5 BY MR. FROST:</p> <p>6 Q. That was a bad question. Did you do any 7 editing of the charts that were included in the final 8 report or did you just put them in as provided by 9 counsel?</p> <p>10 A. I directed them to put them in.</p> <p>11 Q. So plaintiffs' counsel ultimately put it 12 into the report the way it's structured?</p> <p>13 MS. SCOTT: Objection.</p> <p>14 A. I indicated the documents to be included 15 in the table, and they put it in the table.</p> <p>16 BY MR. FROST:</p> <p>17 Q. Is that true for all of the tables or did 18 they produce -- did they provide some of the content of 19 the tables as well?</p> <p>20 MS. SCOTT: Objection.</p> <p>21 A. I'd have to look to refresh.</p> <p>22 BY MR. FROST:</p> <p>23 Q. That's okay. Take your time.</p> <p>24 A. I'm already a little tired. That table, 25 I requested them to do. And that table. Sorry. I'm</p>
<p>1 A. Those are things I found on my own. You 2 know, many of the books I -- some I just had on my 3 shelf, you know. I've actually gone through three 4 versions of some of them.</p> <p>5 Q. So were any of the reports, treatises, 6 books, et cetera, you relied on provided to you by 7 plaintiffs' counsel?</p> <p>8 A. No, I don't think so.</p> <p>9 Q. Did anybody help you prepare the report?</p> <p>10 A. I asked counsel to create the charts that 11 are in the report, and this was my first time doing such 12 an extensive report. So I asked about organizational 13 issues, things like that.</p> <p>14 Q. What about other than the charts that 15 appear in the report? Did counsel assist you with any 16 of the other -- the word just escaped my mind. I 17 apologize.</p> <p>18 A. Text?</p> <p>19 Q. Any of the other, sort of principle of 20 research or any of the other opinions that are in the 21 paper?</p> <p>22 MS. SCOTT: Objection.</p> <p>23 A. No.</p> <p>24 BY MR. FROST:</p> <p>25 Q. And did you have any hand at editing the</p>	<p>1 new at this, a little bit nervous. So I directed them 2 to put those tables in.</p> <p>3 Q. Okay. Did you direct them to -- I'll 4 strike that.</p> <p>5 So the actual documents that are 6 reflected in the tables, was that your work that you --</p> <p>7 A. Those are documents I reviewed, yes.</p> <p>8 Q. Okay. And you're the one who put 9 together the list of documents for them ultimately to 10 put in table form to include in the report?</p> <p>11 MS. SCOTT: Objection. Asked and 12 answered.</p> <p>13 A. Ultimately, I selected the documents, 14 told them to put them in.</p> <p>15 BY MR. FROST:</p> <p>16 Q. In forming your opinions to this report, 17 did you have to come to any -- did you have to make any 18 assumptions that you relied on, then, for your ultimate 19 opinions?</p> <p>20 MS. SCOTT: Objection.</p> <p>21 A. That's kind of a tricky question. I 22 assumed that the documents provided by the company were 23 genuine.</p> <p>24 BY MR. FROST:</p> <p>25 Q. Okay. Any other assumptions you had to</p>

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<p>1 make to reach your opinions?</p> <p>2 A. I'm just thinking. I -- I don't think</p> <p>3 so. I -- I assume that documents that I reviewed were</p> <p>4 genuine, I guess, is maybe the best way to express that.</p> <p>5 Q. And by "genuine," do you mean, you know,</p> <p>6 part of the actual documents accompanied?</p> <p>7 A. They weren't altered in some way or --</p> <p>8 Q. Okay. Yep.</p> <p>9 A. Sometimes it was, you know, there were --</p> <p>10 so, for example, the SEM document in this report and,</p> <p>11 actually, other things, the images were extremely</p> <p>12 degraded. It appeared that several documents had been</p> <p>13 photocopied, so one could supplant things. You know,</p> <p>14 again, I don't know, so that's why I say that I assume</p> <p>15 things are genuine.</p> <p>16 Q. Okay. I think we're on the same page</p> <p>17 about what "genuine" means. I just wanted to make sure.</p> <p>18 A. Yeah.</p> <p>19 Q. All right. And do you agree with me that</p> <p>20 in forming your opinions, it's important for you to keep</p> <p>21 a fair and open mind and look at the data in an</p> <p>22 impartial way?</p> <p>23 MS. SCOTT: Objection.</p> <p>24 A. I believe it's important to look at data,</p> <p>25 yes.</p>	<p>1 role was to be objective. And I reviewed several</p> <p>2 documents, you know, numerous, numerous, numerous</p> <p>3 documents objectively.</p> <p>4 BY MR. FROST:</p> <p>5 Q. And did you know what role the counsel</p> <p>6 who engaged you had? Did you know that you were</p> <p>7 representing the plaintiffs versus the company?</p> <p>8 A. I'm sorry. I missed a word.</p> <p>9 Q. Did you know what role you were hired to</p> <p>10 do?</p> <p>11 A. I knew they were on the side of the</p> <p>12 plaintiffs, yes.</p> <p>13 Q. And you knew that, ultimately, they were</p> <p>14 looking for evidence of bad mining practices and</p> <p>15 opinions regarding inadequate sampling, things of that</p> <p>16 nature?</p> <p>17 MS. SCOTT: Objection.</p> <p>18 A. I think they -- it's my opinion that they</p> <p>19 were looking for data to support their case in some way</p> <p>20 and also evaluate, potentially, if there was not a case.</p> <p>21 BY MR. FROST:</p> <p>22 Q. Do you believe there's any additional</p> <p>23 data you need to see in order to fully evaluate the</p> <p>24 mining practices and the sampling practices by the two</p> <p>25 companies in this case?</p>
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<p>1 BY MR. FROST:</p> <p>2 Q. Do you believe it's important to look at</p> <p>3 it in an impartial way?</p> <p>4 MS. SCOTT: Objection.</p> <p>5 A. I did look at things impartially, yes.</p> <p>6 BY MR. FROST:</p> <p>7 Q. Coming in to your review of the</p> <p>8 documents, were you told what plaintiffs' liability</p> <p>9 theories were in this case?</p> <p>10 MS. SCOTT: Objection.</p> <p>11 A. I don't know what that word means.</p> <p>12 BY MR. FROST:</p> <p>13 Q. Sure.</p> <p>14 A. What's plaintiff liability theory?</p> <p>15 Q. Yeah. I'll ask it a different way.</p> <p>16 A. Okay.</p> <p>17 Q. Before you were coming in to review the</p> <p>18 documents, were you told by plaintiffs, ultimately, what</p> <p>19 an opinion or what type of opinion they were looking</p> <p>20 for?</p> <p>21 MS. SCOTT: Objection.</p> <p>22 A. No, not really. I mean, in our early</p> <p>23 discussions, my job was to evaluate the data, so -- and</p> <p>24 I feel I've done that objectively. I knew it was</p> <p>25 connected to a case involving ovarian cancer, but my</p>	<p>1 MS. SCOTT: Objection. Asked and</p> <p>2 answered multiple times.</p> <p>3 A. I would consider looking at other data,</p> <p>4 of course, but looking at that other data would not</p> <p>5 change the opinions expressed in this report. Other</p> <p>6 data doesn't negate the fact that we have all these</p> <p>7 occurrences of materials. I mean, so there's over 90</p> <p>8 occurrences documented or there's about 90 or so in the</p> <p>9 one table of asbestos. You know, it doesn't negate --</p> <p>10 for me, fundamentally, it's using the powder x-ray</p> <p>11 diffraction as the screening method that's fundamentally</p> <p>12 flawed. The reasons, you know, I don't want to -- do</p> <p>13 you want me to --</p> <p>14 BY MR. FROST:</p> <p>15 Q. We'll get to that.</p> <p>16 A. I can stop.</p> <p>17 Q. We'll turn to that later.</p> <p>18 A. Okay. All right. Good.</p> <p>19 Q. You said before you're not a medical</p> <p>20 doctor, right?</p> <p>21 A. I'm sorry? Medical doctor, no.</p> <p>22 Q. And you're not a toxicologist, right?</p> <p>23 A. Correct.</p> <p>24 Q. And do you consider yourself a regulatory</p> <p>25 expert?</p>

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<p>1 A. No.</p> <p>2 Q. And you're not an expert in regulatory</p> <p>3 processes or mine regulations?</p> <p>4 A. No, I'm not an expert.</p> <p>5 Q. Before working on this report, have you</p> <p>6 ever worked with talc before?</p> <p>7 A. In my class work, my advisor was Steve</p> <p>8 Guggenheim, and, of course, Warren Huff was my master's</p> <p>9 advisor. So I had several clay mineralogy classes, and</p> <p>10 we analyzed talc. And my Ph.D. advisor specifically,</p> <p>11 you know, he would tell me, go look at this mineral with</p> <p>12 the TEM and x-ray, so I would know and be familiar with</p> <p>13 things, so but I don't have a specific thing on talc.</p> <p>14 Q. So other than, you know, your use of it</p> <p>15 in undergraduate and graduate and Ph.D. work, you know,</p> <p>16 you've never studied talc, you've never published on</p> <p>17 talc, anything like that?</p> <p>18 A. No.</p> <p>19 Q. Other than, you know, looking at it so</p> <p>20 you'd be able to identify minerals, have you ever done</p> <p>21 any examination or testing of talc?</p> <p>22 A. Other than just looking at it for -- as</p> <p>23 far as learning the details of the mineral, no.</p> <p>24 Q. Have you ever been to a talc mine?</p> <p>25 A. Yes, in California. There's this mine in</p>	<p>1 for the record, you don't know one way or the other</p> <p>2 whether this mine --</p> <p>3 A. I don't know the exact source.</p> <p>4 MS. SCOTT: Be careful you don't talk</p> <p>5 over one another.</p> <p>6 THE WITNESS: I'm sorry.</p> <p>7 MS. SCOTT: That's okay.</p> <p>8 THE WITNESS: I apologize.</p> <p>9 BY MR. FROST:</p> <p>10 Q. And when you were at this mine in Darwin,</p> <p>11 I take it there were no mine operations continuing at</p> <p>12 the time you were visiting?</p> <p>13 A. I believe it would just be alum land.</p> <p>14 But dealings and things were -- you know, I mean, things</p> <p>15 were there.</p> <p>16 Q. And you can't tell me what type of talc</p> <p>17 that was produced, whether it was industrial talc,</p> <p>18 cosmetic talc or something else, right?</p> <p>19 A. Correct. I don't know. There's no</p> <p>20 record. We found it in a guidebook, thought it'd be a</p> <p>21 good experience for the students.</p> <p>22 Q. And other than that visit, you've</p> <p>23 certainly never been to a talc mine that is currently</p> <p>24 undergoing operation, correct?</p> <p>25 A. Correct.</p>
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<p>1 Darwin. So Darwin was this area in California on the</p> <p>2 south side of Joshua Tree, and there's asbestos all over</p> <p>3 the place, and the mine closed -- if I remember</p> <p>4 correctly, the mine closed, like, in the '50s. So it</p> <p>5 might have been, you know, the mine that was -- where</p> <p>6 things were sourced from when the Italian mines were not</p> <p>7 around or, you know, the World War II era.</p> <p>8 But, yeah, I went there with Brian</p> <p>9 Currie, and we do a field trip to Death Valley and the</p> <p>10 surrounding areas all the time. So, yes, I've been to</p> <p>11 at least that talc mine, and I've been on several --</p> <p>12 I've been on field trips to, like, metamorphic terrains</p> <p>13 in New England states, but I can't remember if I saw</p> <p>14 talc there or not. I have not physically been to the</p> <p>15 Vermont mines, but, yes, I've been to a talc mine.</p> <p>16 Q. So you just made the statement that this</p> <p>17 mine in Darwin, you know, may have been during World War</p> <p>18 II, where they -- I'm looking at the thing -- where they</p> <p>19 source talc from. That's just a guess by you, correct?</p> <p>20 A. Correct. As I said, it may have been.</p> <p>21 But the region, as I understand thinking about that</p> <p>22 field trip, you know, I may be foggy, but there's other</p> <p>23 talc mines in the area. But, yeah, there was asbestos</p> <p>24 in that.</p> <p>25 Q. Okay. But, again, I just want to clarify</p>	<p>1 Q. Have you ever published anything</p> <p>2 regarding amphiboles?</p> <p>3 A. I'm trying to think. My master's thesis</p> <p>4 had -- there were amphiboles in those bentonites. Aside</p> <p>5 from that, I don't think so, or if I did, it was not a</p> <p>6 major component. Not memorable.</p> <p>7 Q. And other than what you recall in your</p> <p>8 thesis, you've never done any testing of amphiboles or</p> <p>9 anything of that nature?</p> <p>10 A. I'm trying to -- well, I have nothing</p> <p>11 published, but I have ran across -- so I've done -- you</p> <p>12 know, I have several. I have many projects with</p> <p>13 students, and some of those projects, for example, I</p> <p>14 think I -- there were minerals that I would identify in</p> <p>15 the TEM as amphibole for the coke formation, which was</p> <p>16 kind of unusual. So the coke formation is a local</p> <p>17 bedrock.</p> <p>18 Q. Okay.</p> <p>19 A. So but nothing -- nothing in the</p> <p>20 peer-review literature, and I don't even know if it was</p> <p>21 mentioned in the abstract. I do remember occasionally</p> <p>22 running across amphiboles. It's amazing what you'll</p> <p>23 find in the TEM. There's all kind of crazy stuff if you</p> <p>24 look for it. Yeah.</p> <p>25 Q. And I think we covered this before, but</p>

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<p>1 you've never done any testing of talcum powder or 2 over-the-counter cosmetic products, right?</p> <p>3 A. No.</p> <p>4 Q. Before you were contacted by plaintiffs' attorneys in -- it sounds like about December, give or take, of 2017, had you ever done any research regarding talc, talcum powder, anything of that nature?</p> <p>8 A. No.</p> <p>9 Q. And had you ever done any research prior to being contacted about the mining practices at talc mines or looking at the geological mine deposits?</p> <p>12 A. I'm sorry. A research on, on talc mining?</p> <p>14 Q. Exactly. Talc-mining practices.</p> <p>15 A. Specifically? No.</p> <p>16 Q. Okay. Well, what about the geology of the specific -- you know, did you ever look at the specific geology of any talc mines prior to being engaged in this case?</p> <p>20 A. I took a metamorphic course, and during my master's, under Craig Dietsch, I remember we talked about talc in that class. So Craig is a metamorphic petrologist. So -- and then, you know, my -- I've read papers. I mean, all through my Ph.D., my advisor hammered that I should read everything around the topic.</p>	<p>1 Q. And you certainly have never written any opinions regarding talc, talc mining practices, you know, et cetera, before getting engaged in this case and the other case from Waters & Kraus, right?</p> <p>5 A. Correct.</p> <p>6 MS. SCOTT: Objection.</p> <p>7 BY MR. FROST:</p> <p>8 Q. On your CV, I know you notice you have a patent for something called asbestos containment composition.</p> <p>11 A. Yes.</p> <p>12 Q. What is that?</p> <p>13 A. It's a mixture of clay minerals.</p> <p>14 Q. And what's the patent?</p> <p>15 A. Basically, it's a mixture of kaolinite and montmorillonite, if I recall. Essentially, it's one we produced but didn't really pursue. It was actually my brother-in-law thought it would be a good idea. So but, yeah.</p> <p>20 Q. So it's patented but not in production or use?</p> <p>22 A. Right. And I don't regard patents as peer-review literature. Those are -- that's a different.</p> <p>25 Q. Yeah. I actually agree with you on that</p>
<p>1 So -- but I've not -- I haven't mapped a talc deposit, for example.</p> <p>3 Q. So I guess the best way to put it, and you can correct me if I'm wrong, but it sounds like you've read papers about talc deposits and all other types of deposits.</p> <p>7 A. That's in my training.</p> <p>8 Q. But you never did any specific research narrowing down on talc deposits, specifically?</p> <p>10 A. Correct. I have no peer-review literature on talc.</p> <p>12 Q. Have you ever attended any conferences that talk about talc mining or specific, you know, talc mine geology?</p> <p>15 A. I've attended several clay minerals society meetings periodically throughout my career. I haven't attended any in a few years. I don't remember their names, but, you know, I remember seeing some stuff on talc, nothing specific. I was always focused on either the bentonites or palygorskite/sepiolite.</p> <p>21 Q. Okay. So there might -- you know, these various conferences, talc might have been a topic, but it wasn't something you were there to concentrate on or to talk about?</p> <p>25 A. Correct.</p>	<p>1 one.</p> <p>2 A. Yeah.</p> <p>3 Q. I was just -- I couldn't find the patents, so I was wondering what it was.</p> <p>5 A. Oh, surprise.</p> <p>6 Q. All right. If you want to open your report to page -- it's Exhibit 1 in front of you.</p> <p>8 A. Okay.</p> <p>9 Q. To page 45. Do you have a summary of the opinions you're rendering in this case?</p> <p>11 A. Okay.</p> <p>12 Q. And in looking at one through five there, are those the five opinions that you believe are supported by the report?</p> <p>15 MS. SCOTT: Objection.</p> <p>16 A. Yeah, I believe these are, these are my opinions. That's the -- essentially, these are the summary of those opinions.</p> <p>19 BY MR. FROST:</p> <p>20 Q. Okay. And these fairly reflect the opinions you intend to offer in this case? There's nothing else that you can think of that you're going to opine about?</p> <p>24 A. With respect to this report, correct.</p> <p>25 Q. And then I note in the addendum report,</p>

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<p>1 there's not an additional opinion given. I think the 2 report states that it supports the opinions given in the 3 preliminary report; is that correct?</p> <p>4 A. Let me look.</p> <p>5 Q. That's Exhibit 2. I believe the quote is 6 that "it supports and further enhances my opinions 7 outlined in the original report"?</p> <p>8 A. Correct, yeah.</p> <p>9 Q. So you agree with me there are no new 10 opinions in the addendum report. It's just additional 11 support for the five opinions you plan to render in this 12 case?</p> <p>13 A. There's no new opinions. The silver -- 14 there's new data, but, yeah, there's no new opinions. 15 It's the addendum supports the first.</p> <p>16 Q. And I take it you haven't published this 17 report or published these opinions anywhere, have you?</p> <p>18 A. Absolutely not.</p> <p>19 Q. Do you intend to publish them?</p> <p>20 A. No.</p> <p>21 Q. Do you intend to publish any of the 22 research you've done with relation to this report?</p> <p>23 A. No.</p> <p>24 Q. Did anybody help you do any of the, the 25 research underlying the report?</p>	<p>1 but I had read those during my dissertation time as 2 well.</p> <p>3 Q. Did you go --</p> <p>4 A. So I was -- I'm sorry.</p> <p>5 Q. I'm sorry. I didn't mean to cut you off. 6 I thought you were done.</p> <p>7 A. So I'm familiar with a broad range of 8 literature.</p> <p>9 Q. Did you have to go out and do any 10 searches for new literature that you didn't already have 11 in your possession?</p> <p>12 A. We got some materials from -- or I got 13 some materials from the library, and there were some 14 things like Gy were things I knew of and Finkelstein 15 were things I knew of that had been discussed either in 16 my classes or I ran across it previously that I had to 17 go re-get.</p> <p>18 Q. Did you spend any time doing any, what 19 I'll call sort of new or independent research in 20 addition to things you've already done in the past to 21 prepare your report?</p> <p>22 A. I don't understand the question. In the 23 sense that?</p> <p>24 Q. For example, did you spend any time in a 25 research library trying to find all the articles about</p>
<p style="text-align: center;">Page 55</p> <p>1 A. No.</p> <p>2 Q. So all the opinions and all the analysis 3 in the original report and the addendum report, you 4 know, are all things that you've researched yourself and 5 are solely your opinion and your --</p> <p>6 A. Yep.</p> <p>7 Q. -- based on your work. Okay. 8 So you have, I believe it's a couple 9 boxes, right, of stuff on the ground that are articles 10 and textbooks? How did you actually go about selecting 11 the literature you were going to review in this case?</p> <p>12 A. The stuff outside?</p> <p>13 Q. Yes, the stuff outside the documents.</p> <p>14 A. So I was informed by, you know, really, 15 the core of my Ph.D. So I had a class on crystal 16 chemistry and phyllosilicates, and basically, I was 17 expected to read and learn things. And so my collection 18 of books is, in part, from that effort. And then, also, 19 I teach classes regularly, so I'm familiar with the 20 books that I use in those classes and then, also, citing 21 things for research.</p> <p>22 So I had a master's student who did a 23 thesis on New Caledonia, which has talc and asbestos and 24 other things. So, essentially, you know, the Brinley 25 papers were an example of, you know, those came back up,</p>	<p style="text-align: center;">Page 57</p> <p>1 the different geological deposits at issue in this case?</p> <p>2 A. No. My opinion, the knowledge set I had 3 generated over decades was appropriate reference point. 4 So I didn't, I didn't look at, you know, French 5 literature, Chinese or Russian literature, for example.</p> <p>6 Q. Do you agree with me that the standard 7 for rendering your opinions in peer-reviewed literature 8 is different than the standard for rendering opinions in 9 litigation cases?</p> <p>10 MS. SCOTT: Objection.</p> <p>11 A. That's a -- sort of a complex question. 12 Can I talk about?</p> <p>13 BY MS. SCOTT:</p> <p>14 Q. Sure.</p> <p>15 A. So industrial mineral companies, margins 16 are not great. So, basically, the profits are not 17 great. So, you know, there's not -- well, I should back 18 up. Industrial mineral companies, other mineral 19 companies, they rely on peer-review literature for their 20 analytical standards and practices. So, essentially, 21 peer-review literature is kind of part of that. They 22 don't -- mineral companies don't necessarily talk to 23 each other. There are, like, societies, so there's a 24 clay mineral society. I think there's a zeolite 25 society. But the sort of industrial secrets or the</p>

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<p>1 details and methods, you know, everyone's afraid that 2 they're going to get ripped off from someone else. So 3 peer-review literature is a sort of common ground that 4 everyone uses.</p> <p>5 Q. I guess I'll ask the question a different 6 way.</p> <p>7 A. Okay.</p> <p>8 Q. Because it was about, sort of, the 9 standard for opinions. Do you believe that the standard 10 of review for an opinion, you know, such as in the 11 expert report you've given in this case, is the same or 12 different than the standard review if you were trying to 13 publish a peer-reviewed article on the same subject?</p> <p>14 MS. SCOTT: I'm going to object and ask 15 him not to speculate on your initial question in 16 any legal standards.</p> <p>17 A. Yeah. I am -- as I -- I'm not familiar 18 with legal review.</p> <p>19 BY MS. SCOTT:</p> <p>20 Q. Do you believe the -- when you were 21 writing the report, do you believe that the opinions in 22 this report, you know, would meet or be sufficient for 23 peer-review publication?</p> <p>24 MS. SCOTT: Objection.</p> <p>25 A. I don't want -- I'm not an editor. I</p>	<p>1 regarded that metamorphic rock, metamorphic terrains 2 take a long time to form. So pressure temperature 3 loops, and this is well documented in the geologic 4 literature. You know, it's in the classwork that I've 5 had.</p> <p>6 Q. Would you agree with me that some talc 7 deposits form -- you know, the formation of talc 8 deposits, some take a lot longer, some take a lot 9 shorter, depending upon the characteristics of the 10 formation?</p> <p>11 MS. SCOTT: Objection.</p> <p>12 A. I'm not gonna speculate without data. 13 But, you know, generally it's accepted that talc 14 deposits take several millions of years to form.</p> <p>15 BY MR. FROST:</p> <p>16 Q. What's your basis of that opinion?</p> <p>17 A. My classwork.</p> <p>18 Q. Can you tell me what factors affect the 19 formation of talc, what the controlling factors of 20 metamorphism would be?</p> <p>21 A. Heat and pressure and fluids.</p> <p>22 Q. Would you agree with me that not all talc 23 is formed with the exact same amount of heat, pressure 24 and fluids in the mix?</p> <p>25 A. There is variability.</p>
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<p>1 don't want to speculate.</p> <p>2 BY MS. SCOTT:</p> <p>3 Q. That's fine. Turning in to your report. 4 Start at page 2. So you state that "Talc is a mineral 5 derived almost exclusively from metamorphic deposits," 6 right?</p> <p>7 A. Correct.</p> <p>8 Q. You also agree with me that not all talc 9 forms through a metamorphic process, right?</p> <p>10 A. You can have soils developed on talc 11 deposits, so, yes.</p> <p>12 Q. Yes, you can have talc form --</p> <p>13 A. Developed on. And then you can also have 14 potential hydrothermal alteration at mid-ocean ridges, 15 which is also a metamorphic. It's hydrothermal 16 alteration.</p> <p>17 Q. You also state further down that the 18 process of metamorphism occurs over several tens of 19 millions of years. Is that always the case?</p> <p>20 A. Generally, that's the case, you know, in 21 rocks where you have talc occurring, yes.</p> <p>22 Q. Do you think that's true for all talc 23 deposits that have formed?</p> <p>24 A. For, you know, the instances of mid-ocean 25 ridge, perhaps not, but, essentially, it's generally</p>	<p>1 Q. Would you agree with me that not all talc 2 deposits are geologically the same?</p> <p>3 MS. SCOTT: Objection.</p> <p>4 A. I don't think any -- every rock and every 5 geologic deposit has its own history, so one of the big 6 things that's come out in mineralogy is mineralogical 7 evolution. And Bob Hazen's paper talks about this, and 8 there's been several successive papers. So based on 9 that, you know, every deposit has individual 10 characteristics, but there's general sort of groups or 11 classes.</p> <p>12 BY MR. FROST:</p> <p>13 Q. And you'd agree with me that not every 14 mined deposit of talc is the same either, correct?</p> <p>15 A. It all depends on what you mean by "the 16 same." You know, you can have things that are not the 17 same but very similar.</p> <p>18 Q. Sure. But not every mined deposit is 19 going to be exactly the same chemically, geologically. 20 They're all going to form in different ways at different 21 times. Would you agree with that?</p> <p>22 A. Unless they are geologically related. So 23 you can have two parts. You can have multiple deposits 24 in the same geologic terrain that form at approximately 25 the same time. Other issues, I mean there's issues with</p>

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<p>1 geochronology, right? So, you know, age range errors 2 can be plus or minus 10 million years. So if you have a 3 age of a metamorphic deposit that is talc and the age is 4 plus or minus 20 million years, you know, based on the 5 available data, that's a reasonable, you know, 6 chronometric value.</p> <p>7 Q. Sure. And based upon when it formed, how 8 it formed, the pressures, the temperatures, whether or 9 not there's variability of that would effect what other 10 minerals might be with the talc, right?</p> <p>11 A. Correct.</p> <p>12 Q. And also depending what surrounding rock 13 there is to the rock that changed to talc would also, 14 you know, affect what might be on the margins of a talc 15 deposit, for example?</p> <p>16 A. I'm sorry. The last part of your 17 question?</p> <p>18 Q. Sure. So depending what the surrounding 19 rock was to the rock that metamorphosed to talc would 20 also affect what you would see in the black wall, for 21 example, what you see at the boundaries for the talc, 22 right?</p> <p>23 A. It can, if there's a reaction or not, so 24 it's dependent upon the situation.</p> <p>25 Q. That's what I was going to stay. It's</p>	<p>1 A. Yes, it does.</p> <p>2 Q. And that's effectively what we're talking 3 about here, is that it's the other minerals that were 4 around during the formation of the talc. They may be in 5 the deposit, they may not, and they may be different 6 depending on deposits, right?</p> <p>7 MS. SCOTT: Objection.</p> <p>8 A. I'm sorry. Can you --</p> <p>9 BY MS. SCOTT:</p> <p>10 Q. Sure. So you agree with me that not 11 every talc deposit is going to have the same exact 12 associated other minerals with talc, right?</p> <p>13 MS. SCOTT: Objection.</p> <p>14 A. It depends, because, I mean, you have -- 15 so, in mineralogy, we have a term called "perigenesis." 16 So essentially, there are -- these common minerals are 17 associated with each other. So out of context, for 18 example, galena and sphalerite are very commonly 19 associated with each other.</p> <p>20 So, essentially, I think a more correct 21 way of saying things is that chrysotile asbestos and 22 talc are commonly associated with each other. So 23 perhaps not all talc deposits have the same mineral 24 assemblage, but many of them do have very similar 25 mineral assemblages, and that's even when the chemistry</p>
<p>1 variable, and it changes from deposit to deposit? You 2 have to look specifically?</p> <p>3 A. That's why every deposit should be 4 evaluated with an appropriate core density and high 5 sampling density.</p> <p>6 Q. So in order to fully understand what's in 7 a particular talc deposit, you really do need to know 8 how it formed, what was with it when it formed, what's 9 around it, things like that, right?</p> <p>10 A. I'm sorry. To understand a talc deposit?</p> <p>11 Q. Yes.</p> <p>12 A. At what level or what understanding, what 13 context?</p> <p>14 Q. To understand what specifically, you 15 know, is associated with that talc, what other minerals 16 might be associated with the talc, you really have to 17 look at the specific deposit, how it was formed, what 18 other constituent minerals were around it, things of 19 that nature, correct?</p> <p>20 A. Yes. One should evaluate what is in the 21 deposit and what is adjacent to the deposit.</p> <p>22 Q. You also state on page 2, on the next 23 paragraph down, that "Talc can have, and commonly does 24 have, natural impurities." And that's effectively what 25 we're talking about?</p>	<p>1 varies.</p> <p>2 BY MS. SCOTT:</p> <p>3 Q. And that's what I'm getting to, is just 4 because some minerals are associated with talc doesn't 5 mean that other mineral is going to be in every single 6 talc deposit in the world, right?</p> <p>7 MS. SCOTT: Objection.</p> <p>8 A. Correct, but that doesn't mean that's not 9 very common, either.</p> <p>10 BY MR. FROST:</p> <p>11 Q. Sure. But we're talking about -- you 12 agree with my statement that not every single talc 13 deposit in the world will have all of the same exact 14 accessory minerals associated with it, right?</p> <p>15 MS. SCOTT: Objection. Calls for 16 speculation.</p> <p>17 A. Yeah. I don't want to speculate on that.</p> <p>18 BY MR. FROST:</p> <p>19 Q. It's not speculation.</p> <p>20 A. Because, you know, there's --</p> <p>21 Q. Isn't it science?</p> <p>22 A. You know, I go back to the New Caledonia 23 example. It has talc, but not every talc deposit has 24 New Caledonia assemblages.</p> <p>25 Q. Okay. So the answer to my question would</p>
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<p>1 be yes, right, that not every single talc deposit has 2 the exact same accessory minerals associated with it?</p> <p>3 MS. SCOTT: Objection.</p> <p>4 A. Correct.</p> <p>5 BY MR. FROST:</p> <p>6 Q. And you also agree with me that -- I'm 7 going to use the word, you know, "pure," to mean more 8 talc, but there are some talc deposits that are more 9 pure than other talc deposits. There's some talc 10 deposits that are comprised of more talc than others, 11 correct?</p> <p>12 MS. SCOTT: Objection.</p> <p>13 A. It's -- so it's speculative. I don't 14 know exactly what you mean by "pure." So it's been 15 known, for example, that at the atomic level, you can 16 have intergrowths with chrysotile with talc. So, yeah. 17 I'm really not quite sure how to answer that question.</p> <p>18 BY MR. FROST:</p> <p>19 Q. So you have no opinion that if I were to 20 go find a talc deposit over here and find one over here, 21 that one might have -- be comprised of more talc or have 22 a more pure metamorphism of the talc than another?</p> <p>23 MS. SCOTT: Objection.</p> <p>24 A. Without any priority knowledge -- yeah. 25 I would want to -- to answer that question correctly,</p>	<p>1 chrysotile.</p> <p>2 BY MR. FROST:</p> <p>3 Q. So as an expert in geology, you can't 4 tell me as a fact, sitting here today, that there are 5 some talc deposits that are exist in the world that are 6 comprised of more talc than others?</p> <p>7 MS. SCOTT: Objection. Asked and 8 answered.</p> <p>9 A. I think I answered that, yeah. There's 10 some that have a higher percentage of talc, but there's 11 impurities that also occur. So, you know, if you have 12 10 percent asbestos in one mine and 2 percent asbestos 13 in one and 30 percent in another, so, yes, that's, 14 that's possible.</p> <p>15 BY MR. FROST:</p> <p>16 Q. I don't think you're understanding my 17 question. More fundamentally, don't you agree with me 18 some talc deposits are only made up of 20 percent talc 19 and are predominantly other minerals, as were other talc 20 deposits are made up of, for example, 50 or 60 percent 21 talc?</p> <p>22 A. So I'm unclear. Are you talking about 23 talc deposits or talc ores?</p> <p>24 Q. I'm talking about talc deposits, 25 generally, geological formations of talc.</p>
<p>1 you need to analyze each individual deposit.</p> <p>2 BY MR. FROST:</p> <p>3 Q. As an expert in geology, you can't tell 4 me that there are some deposits of talc in the world 5 that are more pure than others, that are more comprised 6 of talc than others?</p> <p>7 MS. SCOTT: Objection.</p> <p>8 A. One would expect -- you know, so 9 materials are variable in percentages, but I don't think 10 it's reasonable just to declare -- I mean, it seems like 11 a -- perhaps I'm misinterpreting it, but it seems like a 12 arbitrary setup or question. So the -- one cannot -- 13 what I'm trying to say is one cannot predict the exact 14 impurities in any given deposit.</p> <p>15 There are general -- using the 16 peer-reviewed literature and well documented, you know, 17 work of archives going back, for example, Hess, 1933, 18 you know, it is common and reasonable to know that 19 there's some, or very, very likely, asbestos materials 20 are associated with talc.</p> <p>21 And so it is reasonable that -- it's a 22 reasonable, scientifically reasonable interpretation 23 that one would expect impurities of many types, but they 24 may not be the same. So we have examples where there's 25 tremolite, and there's examples where there's</p>	<p>1 A. So, yeah. Talc can occur at a variable 2 concentration in metamorphic rocks.</p> <p>3 Q. You will also agree with me that some 4 talc deposits can be larger than others, right, 5 geologically?</p> <p>6 A. Yes.</p> <p>7 Q. You'll agree with me that talc is sort of 8 all over the place and what are the mine deposits are 9 sort of unique?</p> <p>10 A. No. Talc is not all over the place. 11 Metamorphic rocks comprise approximately 10 percent or 12 so of rocks exposed at the surface of the earth, and so 13 talc, by that definition alone, talc is not all over the 14 place.</p> <p>15 Q. You'd agree with me talc can be found 16 from Quebec to Georgia, for example?</p> <p>17 A. I think that's a very general in, perhaps 18 in consumers' homes, in baby powder bottles. The --</p> <p>19 Q. You don't think there are talc formations 20 found in the Appalachian Mountains from Quebec through 21 Georgia?</p> <p>22 A. There --</p> <p>23 MS. SCOTT: Objection.</p> <p>24 A. There are other talc deposits in North 25 America, yes. They're not restricted to Vermont, but</p>

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<p>1 talc deposits do occur. 2 BY MR. FROST: 3 Q. And talc deposits occur in places like 4 Alabama, Texas, Minnesota, California? You'll agree 5 with me on that as well, right? 6 A. I remember some of the specifics in the 7 Southern states. I know they occur in California. 8 Q. Will you agree with me that some talc 9 deposits are larger than others? 10 MS. SCOTT: Objection. 11 A. Yes. You can have small talc deposits. 12 You can have big talc deposits. You can have -- they're 13 just like granites. You can have small granites and 14 large granites. You can have -- you know, a variation 15 in size and scale and complexity is a very common trait 16 in geologic terrains. 17 BY MR. FROST: 18 Q. You'd agree with me because of variations 19 in size, scale, complexity, accessory minerals, et 20 cetera, you can't make general statements about talc 21 deposits. Not every talc deposit's the same, right? 22 MS. SCOTT: Objection. 23 A. To some level, I think one can. You can 24 make general statements about rock types, what is common 25 or likely to occur. If we were able to precisely</p>	<p>1 but you can have minerals that have fibrous habits that 2 are not microscopic. 3 So an example would be millerite, which 4 is a nickel sulfide that, essentially, you have these 5 very long black fibers, and it's very commonly -- that's 6 what it occurs as. And the fiber -- fibrous textures, 7 you know, essentially, all morphologies are driven by 8 the unit cell and, essentially, bonding strengths and 9 defect densities and things like that. So fibers are 10 common in asbestiform materials. 11 Q. Is a fibrous habit different than the 12 asbestiform habit? 13 A. So a fiber would be more of a subset of 14 asbestiform. So if I had a chunk of chrysotile, that 15 would be asbestiform, and it would be composed of 16 fibers. 17 Q. So fibers are a smaller subset of 18 asbestiform? 19 A. Generally. 20 Q. Can you define for me what "asbestiform 21 habit" means? Are you able to define what "asbestiform 22 habit" means without referencing your report? 23 A. Asbestiform basically is -- 24 Q. Here, could we do it this way? Without 25 looking at your report, can you define for me what</p>
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<p>1 predict just by thought the distribution of ore, we 2 would have no problem finding platinum and gold and 3 those kinds of things, right? So does that answer the 4 question? 5 Q. Sure. 6 THE WITNESS: Can we take a break? 7 MR. FROST: Sure. 8 VIDEOGRAPHER: We are now going off 9 record, and the time is 10:48. 10 (A recess was taken from 10:48 to 11:03.) 11 VIDEOGRAPHER: We are now back on record 12 and the time is 11:03. 13 BY MR. FROST: 14 Q. Would you describe for me what a "fibrous 15 habit" means? 16 A. In general, it is an elongated particle 17 that -- and the -- so on page 4, I indicate there's 18 length or width ratios for fibers which have fibrous 19 habit of three to one, and then NIOSH is five to one. 20 BY MR. FROST: 21 Q. Okay. Can you define for me what a 22 "fibrous habit" means? Does it purely mean dimensions 23 of three to one to five to one? 24 A. So in the general context of mineralogy, 25 fiber can -- it's actually a little bit of a loose term,</p>	<p>1 "asbestiform" means? 2 MS. SCOTT: Objection. If he needs to 3 look at his report, he can look at his report. 4 MR. FROST: Well, I just want to see if 5 he can do it without looking at the report. 6 BY MR. FROST: 7 Q. But if you need to look at your report, 8 just let me know that you have to look at your report to 9 define it. 10 MS. SCOTT: Objection. 11 A. Asbestiform essentially is a texture that 12 is -- the particles are elongated. They have a high 13 general aspect ratio. 14 BY MR. FROST: 15 Q. So asbestiform is purely a texture? 16 MS. O'DELL: Object to the form. 17 A. A texture with respect to what? 18 BY MR. FROST: 19 Q. Well, that's what you just said. That's 20 what I'm trying to figure out. You used the word 21 "texture." You defined asbestiform as a texture? 22 A. So texture is a general term that means 23 the size, shape and distribution of mineral particles. 24 Q. Is that different than the morphology? 25 A. Morphology generally refers to a crystal</p>

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<p>1 or single phase.</p> <p>2 Q. What do you mean by that, the "single</p> <p>3 phase"?</p> <p>4 A. Single phase, phase is like a -- phase is</p> <p>5 a thermodynamic term. So, in theory, it is something</p> <p>6 that is separable from a system. So you can have</p> <p>7 something like chrysocolla that is grown around and fill</p> <p>8 some other mineral, where you can have glass. Glass is</p> <p>9 a separate phase. Or it can also be a mineral, so it's</p> <p>10 more of just a thermodynamic term.</p> <p>11 Q. Do you agree with me that in order for a</p> <p>12 mineral to be asbestiform, it has to grow in an</p> <p>13 asbestiform habit?</p> <p>14 MS. SCOTT: Objection.</p> <p>15 A. No. So talc is mechanically soft, and I</p> <p>16 can certainly imagine scenarios where you have</p> <p>17 tremolite, large tremolite crystals that exist in a talc</p> <p>18 schist, and that talc schist then experiences continued</p> <p>19 dynamic metamorphism, so things move, and that talc</p> <p>20 crystal can be -- other talc -- or, I'm sorry, the</p> <p>21 tremolite crystal in the talc can then hit other talc or</p> <p>22 other tremolite crystals and essentially abrade and</p> <p>23 grind and be broken down into smaller elongate, elongate</p> <p>24 mineral particles which would be fibrous, and that would</p> <p>25 be one way of producing that texture.</p>	<p>1 BY MR. FROST:</p> <p>2 Q. If you look at page 4 of your report,</p> <p>3 second paragraph, under "Asbestos," you write that</p> <p>4 "Asbestiform refers to a mineral that has grown into a</p> <p>5 fibrous aggregate of long, thin flexible crystals that</p> <p>6 readily separate into smaller crystals of a" smaller</p> <p>7 "length-to-width aspect ratio." You agree with me</p> <p>8 that's very different than what you just told me, right?</p> <p>9 MS. SCOTT: Objection. You just misread</p> <p>10 something. It says, "smaller crystals of a</p> <p>11 similar length."</p> <p>12 MR. FROST: Oh, I apologize.</p> <p>13 MS. SCOTT: No problem.</p> <p>14 A. So I think that's a correct statement.</p> <p>15 BY MR. FROST:</p> <p>16 Q. Which one, the one in your report or the</p> <p>17 one you just gave me?</p> <p>18 MS. SCOTT: Objection.</p> <p>19 A. Both.</p> <p>20 BY MR. FROST:</p> <p>21 Q. You think you can, a mineral can both</p> <p>22 grow as you have here in a fibrous aggregate of long or</p> <p>23 you can create it?</p> <p>24 A. It can -- it can result from the process.</p> <p>25 So in the broad context, if you are crushing or milling</p>
<p>1 BY MR. FROST:</p> <p>2 Q. Is that different than growing in an</p> <p>3 asbestiform habit? In order to be asbestiform, do you</p> <p>4 have to grow in the asbestiform habit?</p> <p>5 MS. SCOTT: Objection.</p> <p>6 A. There's not necessarily -- mineral growth</p> <p>7 would not necessarily be a part of that.</p> <p>8 BY MR. FROST:</p> <p>9 Q. So mineral growth has nothing to do with</p> <p>10 whether or not a mineral is asbestiform?</p> <p>11 MS. SCOTT: Objection.</p> <p>12 A. I think there's a false dilemma. You</p> <p>13 know, as I described, so you can have that, you know, a</p> <p>14 nice, happy actinolite or tremolite crystal. Stress is</p> <p>15 applied during metamorphism and that then breaks apart</p> <p>16 and you can end up with material that is -- that meets</p> <p>17 the definition of a fiber.</p> <p>18 BY MR. FROST:</p> <p>19 Q. So as far as you're concerned, all fibers</p> <p>20 are asbestiform?</p> <p>21 MS. SCOTT: Objection.</p> <p>22 A. No. My mineral, one of the minerals I'm</p> <p>23 an expert in, palygorskite/sepiolite, often the</p> <p>24 individual crystals are referred to as fibers.</p>	<p>1 a talc ore and there's tremolite in it, basically, you</p> <p>2 can process that, it's my expert opinion, that you can</p> <p>3 process that and result in producing asbestiform</p> <p>4 materials or fibers, elongated mineral particles.</p> <p>5 Q. So are all elongated mineral particles</p> <p>6 asbestiform?</p> <p>7 A. I'm sorry. I misspoke. Not necessarily,</p> <p>8 no.</p> <p>9 Q. Okay. Why don't we look at -- well,</p> <p>10 first off, do you have any studies or research that you</p> <p>11 rely on to support your opinion that you can change</p> <p>12 something that grew prismatic into something that's now</p> <p>13 asbestiform?</p> <p>14 A. So I think it's reasonable, based on my</p> <p>15 knowledge of crystal chemistry.</p> <p>16 Q. You can't point me to a single</p> <p>17 peer-reviewed study or NIOSH or anything else that has</p> <p>18 ever supported this opinion?</p> <p>19 MS. SCOTT: Objection.</p> <p>20 A. So I was taught by Steve Guggenheim that</p> <p>21 you can reduce particle size, and when you reduce</p> <p>22 particle size in minerals, essentially, that is driven</p> <p>23 by cleavage. So basically every mineral has a unit</p> <p>24 cell, and that is definition of the elements that are</p> <p>25 unique to that mineral and a specific arrangement.</p>

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<p>1 And, essentially, the nature of bonds in 2 that mineral will be weaker along certain planes for 3 certain minerals such as amphiboles. So basically what 4 happens is when you apply stress, it doesn't matter if 5 that is a five-foot piece of tremolite or if it is a 6 micron piece of tremolite. Essentially, it's absolutely 7 reasonable that if you apply stress and you break that, 8 it will break into smaller pieces, and you can end up 9 with -- essentially, the hat or the shape is the same. 10 Or, essentially, hat or shape is driven by those 11 crystallographic parameters.</p> <p>12 BY MR. FROST:</p> <p>13 Q. All right. Do you know what a cleavage 14 fragment is?</p> <p>15 A. Yeah. It's essentially a fragment that 16 has broken off.</p> <p>17 Q. And you're telling me that cleavage 18 fragments can be asbestosiform that have broken off as 19 prismatic crystals?</p> <p>20 A. I think they can, so they can. They can 21 meet the crystallographic requirements.</p> <p>22 Q. Is your opinion generally accepted by the 23 scientific community?</p> <p>24 A. I have not presented or published on 25 that, but I think, based on my experience and what I</p>	<p>1 particular particle is asbestosiform or a cleavage 2 fragment, and your answer to that was cleavage fragments 3 implies that through some mechanism process, it's been 4 developed. That's what I'm asking. What is this 5 mechanism process? Is this an outside force? Are you 6 talking about processing --</p> <p>7 A. Mechanical.</p> <p>8 Q. You're talking about mechanics. So if a 9 fragment cleaves off because a mechanical force is 10 applied to it, it's a cleavage fragment? If it occurs, 11 if it naturally cleaves, then it's asbestosiform?</p> <p>12 MS. SCOTT: Objection.</p> <p>13 A. You can have, as I mentioned before, you 14 can have the situations totally reasonable, both in the 15 processing and then the natural geologic process, where 16 you can have a tremolite crystal, for example, that 17 essentially is deformed through metamorphic processes. 18 You can have multiple directions of force, and so, 19 basically, you can end up with particles that are 20 asbestosiform as a result of that, and then you can grind, 21 crush, process things that also have an asbestosiform 22 texture.</p> <p>23 BY MR. FROST:</p> <p>24 Q. Are there any standards you're relying on 25 to make this determination of asbestosiform versus</p>
<p>1 know about crystal chemistry of minerals, that is a 2 reasonable interpretation.</p> <p>3 Q. Okay. So your interpretation is that a 4 particle can become asbestosiform, even if it didn't form 5 naturally in an asbestosiform habit by this cleaving down 6 to a particular particle size? Is that a fair summary?</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 A. You, through processing, you can modify 9 many things.</p> <p>10 BY MR. FROST:</p> <p>11 Q. So can you tell me what particular 12 properties will determine whether or not a particle was 13 a cleavage fragment versus an asbestosiform fragment?</p> <p>14 MS. SCOTT: Objection.</p> <p>15 A. Cleavage fragment implies that it has, 16 through some mechanical process, it's been developed.</p> <p>17 BY MR. FROST:</p> <p>18 Q. So a cleavage fragment purely refers to 19 some outside mechanical process?</p> <p>20 MS. SCOTT: Objection.</p> <p>21 A. What do you mean by "purely"?</p> <p>22 BY MR. FROST:</p> <p>23 Q. That's what I'm trying to figure out, 24 what your definition is. So I asked you, you know, what 25 the properties are that will determine whether or not a</p>	<p>1 cleavage fragment?</p> <p>2 MS. SCOTT: Objection.</p> <p>3 A. I'm using the terminology as described in 4 my mineralogy class that I took from Dr. John Grover in 5 1991, and he -- he grew some of the artificial, 6 synthetic fibers for the rat tests in the '70s.</p> <p>7 BY MR. FROST:</p> <p>8 Q. Okay. Other than this class you had with 9 Dr. John Grover, you can't name me another source, 10 another peer-reviewed literature, a scientific paper 11 that supports your theory?</p> <p>12 MS. SCOTT: Objection to form.</p> <p>13 MR. LAPINSKI: I was going to say, make 14 sure you let him ask the full question before 15 you start to answer.</p> <p>16 THE WITNESS: Okay. I'm sorry.</p> <p>17 BY MR. FROST:</p> <p>18 Q. Do you want me to reask it?</p> <p>19 A. The terms were used in my graduate school 20 classes as well. I think that -- yeah.</p> <p>21 Q. And your opinion is whether or not this 22 fragment that breaks off, whether or not it's 23 asbestosiform or cleavage doesn't have anything to do with 24 the way in which the particle originally formed?</p> <p>25 MS. SCOTT: Objection.</p>

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<p>1 A. So crystallographically, in a way, the 2 term's not necessarily extremely relevant. It is the 3 physicality of a particle is such that, you know, it's 4 driven by, essentially, the science. So you can crush, 5 you can grind something, and you can end up with an 6 asbestosiform particle.</p> <p>7 MR. FROST: Let me look at some articles. 8 I'm going to mark this as -- I believe, we're at 9 Exhibit 3.</p> <p>10 (Exhibit 3 was marked for 11 identification.)</p> <p>12 BY MR. FROST:</p> <p>13 Q. Do you recognize this paper? 14 A. No, I do not. I have not seen this 15 report.</p> <p>16 Q. This is not the IRSST 2010 Montreal paper 17 you reference in your report?</p> <p>18 A. I don't remember.</p> <p>19 Q. Look at your -- let me see. I want to 20 find a place that you reference this. If you look at 21 Footnote 5 on page 4.</p> <p>22 A. I don't see a Footnote 5 on page 4.</p> <p>23 Q. Of your report.</p> <p>24 MS. SCOTT: Of your report.</p> <p>25 A. Oh, I'm sorry. Okay. Yeah.</p>	<p>1 high aspect ratio, (length/diameter ratio), increased 2 mechanical properties, flexibility and durability.</p> <p>3 "In the asbestosiform morphology, the 4 crystals grew by forming long and filiform fibers. 5 These fibers are found in bundles that can easily 6 separate into smaller fibers (fibrils), which, during 7 processes, retain their surface and activity properties.</p> <p>8 "OSHA (1992) specifies that the 9 asbestosiform criterion does not depend on the crystalline 10 structure but on how the crystal grows or its 11 crystalline formation. When pressure is applied to" an 12 asbestosiform "fiber, it will bend rather than break."</p> <p>13 Did I read that correctly?</p> <p>14 MS. SCOTT: With one correction.</p> <p>15 MR. FROST: I did miss one?</p> <p>16 MS. SCOTT: Asbestos fiber, not 17 asbestosiform fiber.</p> <p>18 MR. FROST: Oh, I apologize.</p> <p>19 BY MR. FROST:</p> <p>20 Q. Did I read that -- other than that, did I 21 read this correctly?</p> <p>22 A. Okay. Yeah.</p> <p>23 Q. Do you agree with me this definition is 24 very different than the definition you've given me?</p> <p>25 MS. SCOTT: Objection.</p>
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<p>1 BY MR. FROST:</p> <p>2 Q. Do you agree that this is the same report 3 that you have referenced in Footnote 5 on your paper?</p> <p>4 A. Yeah.</p> <p>5 Q. Have you ever read this report before?</p> <p>6 A. I think so.</p> <p>7 Q. And this is something --</p> <p>8 A. I'm tired.</p> <p>9 Q. And this is something you rely on 10 otherwise in your paper, correct?</p> <p>11 A. I forget the specifics of where I've 12 cited it.</p> <p>13 Q. If you turn to page 10, please.</p> <p>14 MS. SCOTT: Of the report or of the --</p> <p>15 MR. FROST: Of the paper, the IRSST 16 paper.</p> <p>17 A. Page 10.</p> <p>18 BY MR. FROST:</p> <p>19 Q. So it's Section 5.1.2, "Asbestiform."</p> <p>20 A. Okay.</p> <p>21 Q. It states, "The term 'asbestiform' refers 22 to a morphology originating from the natural 23 crystallization of a mineral into small crystals, into 24 hair-like fibers (unidimensional). This morphology 25 gives the mineral-specific characteristics, including a</p>	<p>1 A. Not necessarily. It is more specific, 2 but it's, you know, generally in line.</p> <p>3 BY MR. FROST:</p> <p>4 Q. Generally in line. Doesn't the IRSST 5 paper specifically state that an asbestosiform crystal has 6 to grow into that structure to be asbestosiform?</p> <p>7 A. It says that, but again --</p> <p>8 Q. You disagree with that?</p> <p>9 MS. SCOTT: Objection.</p> <p>10 A. It --</p> <p>11 BY MR. FROST:</p> <p>12 Q. It's okay. You can disagree with it.</p> <p>13 A. In my -- it's permissive, not exclusive.</p> <p>14 So I - I --</p> <p>15 Q. I don't -- where does it say it's 16 permissive, not exclusive? Is that in this paper?</p> <p>17 A. No. My class terminology might not be 18 consistent with this.</p> <p>19 Q. Okay. Let's look at another one. What 20 exhibit are we on? Four? I would like to mark this as 21 Exhibit 4. I'll give you a copy.</p> <p>22 MR. FROST: Are we not on four?</p> <p>23 MS. SCOTT: I think it's five.</p> <p>24 MR. FROST: Are we on five? I thought we 25 were on five, too.</p>

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<p>1 MS. SCOTT: I think we're on five. 2 MR. FROST: Okay. Yeah. I was going to 3 say maybe we can keep track. 4 VIDEOGRAPHER: I'm keeping track, but the 5 last one you just gave him, you said three. 6 MR. FROST: Oh, okay. So I guess we are 7 on 4. We'll mark this whatever the next exhibit 8 is. 9 (Exhibit 4 was marked for 10 identification.) 11 BY MR. FROST: 12 Q. Take a look at it. Have you ever seen 13 this paper before? 14 A. I'm not sure. I immediately don't see it 15 in the reference list. 16 Q. I can tell you, it's not on your 17 reference list. 18 A. Okay. Yeah. I have not seen this 19 before. 20 Q. Have you ever heard of Dr. William J. 21 Campbell? 22 A. No, I have not. 23 Q. You'd agree with me that this is a report 24 from the United States Department of the Interior, 25 Bureau of Mines?</p>	<p>1 that are related to the crystal structure and are always 2 parallel to crystal faces." That's in line with what 3 you've described, right, for cleaving? 4 A. That statement is not correct. 5 Q. It's not correct? 6 A. You can have cleavage that is, has a 7 variety of degree as a perfection to it. 8 Q. And, again, do you have -- can you cite 9 me a study that you're relying on for that opinion? 10 A. I can probably point to a book, but it's 11 something that is -- I mean, it's taught in mineralogy, 12 introduction to mineralogy. You have different levels 13 of perfection of cleavage. So, for example, micas are 14 said to be perfect in cleavage, and a lot of the 15 amphiboles are said to be good but not necessarily 16 perfect. 17 And, actually, you can see in this SEM 18 image, there's all kinds of irregularities on the 19 surface. And on this particular SEM image, it's 20 extremely bright. The contrast is wrong. It's not -- 21 you know, you can't tell what is on that right end of 22 the image that is the tremolite particle there. 23 Q. I'll stop you here. I'm confused because 24 your problem with the definition appears to be the word 25 "perfect," which doesn't actually appear in the</p>
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<p>1 A. Yes. 2 Q. You'd agree with me that they are a 3 reliable source -- 4 A. So this is from 1977? 5 Q. Yes. You'd agree with me that the Bureau 6 of Mines is a reliable source of information for 7 geological term -- geological -- 8 A. I am somewhat hesitant's to make a 9 generalization of any organization being extremely 10 reliable or not. It depends on the individual. But, 11 generally, many things that have been produced are 12 reliable. This document is from 1977, which is sort of 13 the end of the heyday of asbestos production. So right 14 around this time, essentially, it was coming to light 15 that asbestos really did have a lot of hazards 16 associated with it. 17 Q. Can you please turn to page 30 of this 18 report? Specifically, there's a the paragraph, it's 19 called "Cleavage Fragment." Do you see where I'm 20 talking about? 21 A. Yes. 22 Q. Okay. If you go down to the second -- I 23 can read the first few on, but -- I'll read all of it 24 for clarity. "Cleavage fragment: A fragment produced 25 by the breaking of crystals in" direct -- in "directions</p>	<p>1 definition. But you generally agree that a cleavage 2 fragment is a cleave along a generally parallel plane of 3 a crystalline structure, right? 4 A. Yes. 5 Q. Okay. If you continue along, it says, 6 "Minerals" -- 7 A. It says "with perfect cleavage." 8 Q. That's in the next, you know, paragraph. 9 A. I'm sorry. I got confused. 10 Q. So it talks a little bit, you know, about 11 it. It talks about amphiboles, et cetera. What I'm 12 concerned is the next paragraph down. It starts, 13 "However, because they did not grow as fibers, they 14 cannot have characteristics of fibers. Consequently, 15 cleavage fragments cannot be called fibers." 16 Do you see where the Bureau of Mines has 17 said that? 18 MS. SCOTT: Object to form. 19 A. So it's my professional opinion that 20 that's inaccurate. I mean, the crystallographic -- you 21 know, from the materials aspect of things, whether 22 something has grown or not, you know, doesn't -- it 23 really doesn't matter too much as far as what it is. So 24 and -- and so, "However, because they did not grow as fibers, they cannot have characteristics of fibers."</p>

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<p>1 Well, you know, if you can cleave or process something, 2 roll it such that, you know, you get particle size 3 reduction, and that particle size is then, matches, 4 although perhaps there is disagreement on what 5 asbestosiform is, but it matches what a fiber is, then 6 that's --</p> <p>7 BY MR. FROST:</p> <p>8 Q. But, again, you can't point me to a 9 single study or peer-reviewed piece of literature that 10 supports your opinion, correct?</p> <p>11 MS. SCOTT: Objection.</p> <p>12 A. I think it's -- I think it's a very much 13 a reasonable interpretation. It's almost too basic, in 14 a way. I mean, if we know -- we're taught, actually, at 15 the introductory level, that minerals cleavage is the 16 first things we teach, and essentially cleavage is an 17 interval property of a given mineral, and then you can 18 reduce it, and that's why minerals, when you crush a 19 mineral, you actually, you have sort of the same general 20 kind of particle shape. So you take mica, for example, 21 and you crush it and you get a particle size reduction, 22 and a lot of that is happening along the cleavage 23 planes. So I think --</p> <p>24 BY MR. FROST:</p> <p>25 Q. So that's what I established. So you</p>	<p>1 A. Yes, I believe this is what's cited in 2 the report. This is the 2010 IARC.</p> <p>3 Q. Can you please turn to page 277? If you 4 look at the bottom paragraph, it says, "Asbestos is a 5 commercial term that describes six minerals that occur 6 in the asbestosiform habit: Actinolite, anthophyllite, 7 chrysotile, grunerite, riebeckite and tremolite (IARC, 8 1977). Similarly to talc, these six minerals occur more 9 commonly in a non-asbestosiform habit and may also be 10 elongated without being asbestosiform." And then if you 11 follow down, it says, "when asbestosiform, they constitute 12 asbestos and, when not asbestosiform, they are referred to 13 as mineral fragments or cleavage fragments."</p> <p>14 So, again, here, IARC is talking about 15 how the crystal forms or how it grows to distinguish 16 asbestosiform versus cleavage fragment, correct?</p> <p>17 MS. SCOTT: Objection.</p> <p>18 A. So you're saying as it forms?</p> <p>19 BY MR. FROST:</p> <p>20 Q. Yes.</p> <p>21 A. So mechanical processes can be how a 22 mineral is formed or how a texture is developed.</p> <p>23 Q. So you're saying the cleave of a 24 prismatic crystal can be considered the morphology of how 25 that crystal forms?</p>
<p>1 think IRSST is wrong. You think the Bureau of Mines is 2 wrong, right?</p> <p>3 MS. SCOTT: Objection.</p> <p>4 BY MR. FROST:</p> <p>5 Q. Why don't we look at the World Health 6 Organization?</p> <p>7 MR. FROST: This is -- I'll mark this as 8 Exhibit 5.</p> <p>9 MS. O'DELL: Monograph 93.</p> <p>10 MR. FROST: Yes, it's Monograph 93.</p> <p>11 Sorry.</p> <p>12 (Exhibit 5 was marked for 13 identification.)</p> <p>14 A. So this would be IARC 2010.</p> <p>15 MR. FROST: Does anyone need a copy or 16 pull it up on your computer?</p> <p>17 MS. SCOTT: Yeah.</p> <p>18 MR. FROST: That's a better way to look 19 at it.</p> <p>20 MR. FERGUSON: I'll take one, Jack, if 21 you've got an extra one.</p> <p>22 MR. FROST: I do.</p> <p>23 MR. FERGUSON: Lighten your load.</p> <p>24 BY MR. FROST:</p> <p>25 Q. Are you familiar with this publication?</p>	<p>1 A. No. You said how a mineral -- what did 2 you say?</p> <p>3 Q. Yes, that's what I said is how a mineral 4 forms. This is what they're saying: A mineral can 5 form --</p> <p>6 A. So --</p> <p>7 Q. -- an asbestosiform habit or not.</p> <p>8 A. -- form is not growth. Form is not 9 growth.</p> <p>10 Q. Okay. Fine. It's saying here that how a 11 crystal grows or develops determines whether or not it's 12 a mineral fragment or asbestosiform, correct?</p> <p>13 MS. SCOTT: Objection.</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 A. "When asbestosiform, they constitute 16 asbestos, and when not asbestosiform, they are referred to 17 as mineral fragments or cleavage fragments." That's how 18 they are referred to. But I don't see anything in here 19 about growth. There's nothing about precipitating out 20 of a solution. There's nothing precipitating out of a 21 melt. There's nothing precipitating from some 22 mineralogical transformation. So -- and, again, you 23 know --</p> <p>24 BY MR. FROST:</p> <p>25 Q. But, again, I just want to go back.</p>

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1	A. -- cleavage -- 2 MR. LAPINSKI: Let him finish his answer. 3 MR. FROST: Sure. 4 A. Whether something is a cleavage or 5 fragment or not, it can be -- it can match the 6 dimensions of something that is defined by NIOSH or 7 other things. It can be 1 micron by 3 microns or it can 8 be 1 micron by 5 microns. So I don't -- the -- you 9 know. But this, this doesn't seem to -- you keep 10 implying that there has to be growth for the mineral to 11 occur, but it's not -- apparently, in here, it doesn't, 12 it doesn't make that stipulation. 13 Grinding, grinding can be one method, and 14 then deformation. We have other examples where, 15 essentially, textures are developed from deformation, 16 meteorite impacts. We have metamorphic rocks. We can 17 have, essentially, high temperature or high pressure 18 metamorphic rocks that have one form of quartz in them. 19 Then when they get exhumed, essentially, they shatter 20 the granite around them and create a different texture. 21 So I don't, I don't think that growth is 22 necessarily related to -- I think, in my professional 23 opinion, it's not related to the generation of cleavage 24 fragments, and it's my professional opinion that 25 cleavage fragments can have asbestiform materials.	1 question. 2 A. -- activity -- 3 Q. Let me ask you a question. Let me ask 4 you the question without reading from the thing, because 5 you're reading the phonetics, which aren't actually the 6 question I'm asking. 7 A. Okay. I'm sorry. 8 Q. What properties, other than size, will 9 tell you whether or not a particle is a cleavage 10 fragment versus an asbestiform fiber? 11 A. What properties other than size? 12 Q. I guess size truly -- is that what 13 determines whether or not a particle is asbestiform 14 versus a cleavage fragment, in your opinion? 15 MS. SCOTT: Objection. 16 A. It's a major, a major factor in it. But, 17 you know, you can have things that are large that are 18 asbestiform as well. So hand samples, images in -- 19 Q. Okay. Can you answer my question? Is it 20 a major component or is that the difference? And if 21 there's more than just size, what are the other things 22 you look at to determine whether or not a particle is a 23 cleavage fragment versus an asbestiform fiber? 24 MS. SCOTT: Objection. He is answering 25 your question. Go ahead, Doctor.
1	The other thing that confuses things is 2 you can have a cleavage fragment that's a meter, right? 3 You can -- you can have large crystals. You can go out 4 to the South Dakota mines and pick up a spodumene, hit 5 it with a hammer. That's a cleavage fragment. Because 6 we have these same atomic laws, essentially, you get the 7 same type of effects into the small particle ranges. 8 Q. So now I'll go back to the same question 9 I asked before you couldn't answer, and that was, other 10 than size, other than this whole idea of aspect ratio, 11 what other differences can you tell me there is between 12 an asbestiform fiber and a cleavage fragment? Is it 13 truly just size, in your opinion, that makes something 14 asbestiform? 15 MS. SCOTT: Object to the form of the 16 question. You can answer. 17 BY MR. FROST: 18 Q. It's an easy enough question. I'll ask 19 it a different way if you want. 20 A. I'm a slow reader. Sorry. What 21 differences can you tell me there is between asbestiform 22 fiber around achieve advantage fragment -- a cleavage 23 fragment. So if you're talking about just differences 24 in general -- 25 Q. Well, no. That's why. Let me ask you a	1 BY MR. FROST: 2 Q. I don't understand how telling me the 3 size of giant pattern, giant rocks that are grabbed from 4 somewhere else. What I want to know are what properties 5 do you look at when you're trying to determine if it's 6 an asbestiform fiber versus a cleavage fragment? Is it 7 just the size of the mineral with -- you know, the 8 aspect ratio of the mineral? Is that purely what 9 determines, in your opinion, whether a particle is asbestiform versus cleavage? 10 A. That and the texture. 11 Q. What do you mean by "texture"? What 12 properties are you looking at in the texture? 13 A. The texture is how -- is the size, shape 14 and distribution of materials. 15 Q. So, again, we're talking about size, 16 shape and distribution. These are the only -- these are 17 the aspects -- 18 A. I get that from -- I'm sorry. 19 Q. I was going to say, size, shape and 20 distribution are the attributes you look at to determine 21 whether or not a particle is asbestiform versus 22 cleavage? 23 A. A spatial distribution is not necessarily 24 size and shape.
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<p>1 Q. What do you mean by "spatial 2 distribution," then?</p> <p>3 A. The occurrence of it in a sample or 4 substrate.</p> <p>5 Q. What do you mean by "occurrence of it in 6 a sample or substrate"?</p> <p>7 A. The placement of it. So, essentially, we 8 can have a lithology onto which, relative to that, an 9 asbestos material occurs.</p> <p>10 Q. What do you mean by lithology upon which 11 an asbestos material occurs?</p> <p>12 A. Lithology is a general term for a type of 13 rock. It's a very general term for a type of rock.</p> <p>14 Q. Okay. So, effectively, you're saying the 15 type of rock it is and the size and shape of the 16 particle determine whether or not it's asbestos?</p> <p>17 Those are the three considerations you look at?</p> <p>18 A. Well, so, not necessarily, but, you know, 19 I'm talking about hand sample size.</p> <p>20 Q. Okay. And this is -- and what about -- 21 and what about micron size, when you're looking at a 22 particle that's micron size?</p> <p>23 A. Aspect ratio is important. I think that 24 and -- so to identify a fiber or a cleavage fragment, to 25 thoroughly identify things, one should generally do,</p>	<p>1 between a cleavage fragment and an asbestos fiber?</p> <p>2 Q. Yes.</p> <p>3 A. A cleavage fragment can be a subset of 4 asbestos fibers.</p> <p>5 Q. So you're telling me there's no 6 difference between a cleavage fragment and asbestos 7 fiber if it's --</p> <p>8 A. No.</p> <p>9 Q. -- if they're the same size?</p> <p>10 A. If it's --</p> <p>11 MS. SCOTT: Let him finish.</p> <p>12 BY MR. FROST:</p> <p>13 Q. If they meet whatever aspect ratio 14 definition you want to put on it, as far as you're 15 concerned, any cleavage fragment that meets that 16 definition is an asbestos fiber?</p> <p>17 MS. SCOTT: Objection.</p> <p>18 A. Speculative in that I don't -- you know, 19 I don't --</p> <p>20 BY MR. FROST:</p> <p>21 Q. It's not speculative. I'm asking for 22 your definition.</p> <p>23 A. I'm sorry. I have an incomplete thought.</p> <p>24 A cleavage fragment can be a subset of -- it can be a 25 subset of an asbestos fiber.</p>
<p>1 should do TEM work. And in order for that data to be 2 interpreted, to identify the aspect ratio and also what 3 the material is, you need to do imaging electron 4 diffraction and electron microscopy.</p> <p>5 Q. Okay. I fear you're not understanding my 6 question. I'm not -- I want to know what the difference 7 is between an asbestos particle and a cleavage 8 fragment. Is it purely the aspect ratio and the type of 9 rock it's generated from, in your opinion?</p> <p>10 MS. SCOTT: Objection.</p> <p>11 A. I'm sorry. I'm having difficulty 12 describing it. I thought I described it. I thought I 13 answered.</p> <p>14 BY MR. FROST:</p> <p>15 Q. What you keep saying is you keep telling 16 me is that aspect ratio is a major component. Is it the 17 only component? Are there others? We've heard the type 18 of rock. Are there any other things you would look at 19 to tell me these are the properties of an asbestos 20 fiber versus these are the properties of a cleavage 21 fragment? I'm just asking for simple mineralogic 22 definition here of what's the difference between a 23 cleavage fragment and an asbestos fiber. If it's 24 rock type and aspect ratio, that's fine.</p> <p>25 A. So, okay. So what's the difference</p>	<p>1 Q. How? Like how do you -- so what -- okay.</p> <p>2 A. Based on the size and the dimensions that 3 are provided in the paragraph in page 4.</p> <p>4 Q. Okay. So it's purely size and dimension 5 is what determines whether or not a cleavage fragment is 6 a subset of asbestos?</p> <p>7 A. Correct.</p> <p>8 Q. That's your opinion?</p> <p>9 MS. SCOTT: Objection.</p> <p>10 A. With respect to only my -- so I think 11 some of our confusion is I'm talking about minerals 12 in general, so things, you know, you would see in a 13 museum. And then there's, essentially, the microscopic 14 scale.</p> <p>15 BY MR. FROST:</p> <p>16 Q. Okay. So there's a -- how you define 17 asbestos is different depending on whether or not 18 it's a hand sample versus something you look at in a 19 microscope?</p> <p>20 A. Potentially, and things can, you know, 21 appear to be asbestos, but they are pseudomorphs.</p> <p>22 Q. Okay. So other than size, which we've 23 now determined is aspect ratio, you can't tell me any 24 other properties that you would look at to determine 25 whether or not a particle, an elongated mineral</p>

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<p>1 particle, is a cleavage fragment versus an asbestosiform 2 fragment. Is that -- is that a fair summary of your 3 opinion?</p> <p>4 A. I'm unsure. I'm sorry. I'm tired.</p> <p>5 The -- if it -- so the -- so in your question, mineral 6 type doesn't matter, correct?</p> <p>7 Q. I don't know. I'm asking you how you 8 define. Does mineral type matter for asbestosiform versus 9 non-asbestosiform?</p> <p>10 A. Well, there are minerals that tend to be 11 asbestosiform or can be asbestosiform and not. So, but 12 that's not necessarily related to the -- asbestosiform is 13 a descriptor of the minerals, not necessarily -- so I 14 would use what, what I have in the report, basically. I 15 would say that a cleavage fragment can be an asbestosiform 16 particle and size. The aspect ratio is a major 17 contributor.</p> <p>18 Also, the -- you know, if it is a -- so, 19 for example, if the chemistry and the electron 20 diffraction data and the images also indicate that it is 21 a mineral that is known to be asbestos, I think that 22 that would be -- that would support that.</p> <p>23 I think that, you know, if you had -- 24 it's like kyanite, for example, might -- kyanite might 25 have -- meet those dimension, fiber-dimension</p>	<p>1 first, it has to be of a rock that could be asbestosiform, 2 and then the major component is the size, meaning aspect 3 ratio. Is that a fair summary of the definition you're 4 giving me?</p> <p>5 A. I'm not sure. I'm sorry. I'm spacing 6 out a little bit. A cleavage fragment can be 7 asbestosiform.</p> <p>8 Q. Okay. But what I keep asking you is --</p> <p>9 A. The criteria?</p> <p>10 Q. The criteria you're using to define 11 something as asbestosiform, is it purely rock type, that 12 is, a type of rock that can be asbestosiform?</p> <p>13 A. I --</p> <p>14 Q. Hold on. That's one.</p> <p>15 A. Okay.</p> <p>16 Q. And then the other, which is the major 17 component, is the size, meaning the aspect ratio of the 18 particle. Are those the two things you look at when 19 you're determining whether or not a particle is an 20 asbestosiform fiber?</p> <p>21 A. I would sort of correct myself in saying 22 the particle size and the mineralogy.</p> <p>23 Q. Okay. Particle size and mineralogy. And 24 mineralogy, meaning the type of mineral it is, correct?</p> <p>25 A. Yes.</p>
<p style="text-align: center;">Page 103</p> <p>1 requirements, but because it is kyanite, it wouldn't 2 necessarily be described as asbestosiform, but it would be 3 a fiber. So there's complexities.</p> <p>4 Q. Okay. So I think we have -- I'll change 5 my summary of your opinion. So in determining whether 6 or not an elongated mineral particle, and we can agree 7 an elongated mineral particle is a particle that, you 8 know, broke off of something that's long, right? Can we 9 agree on that?</p> <p>10 A. Yes.</p> <p>11 Q. Okay. So in order to determine if an 12 elongated mineral particle is a cleavage fragment or 13 asbestosiform fiber, the two things you look at are, 14 first, whether or not it's a rock that can be 15 asbestosiform, and then, second, which is the major 16 component, is its size, meaning aspect ratio. Is that a 17 fair summary of your opinion?</p> <p>18 A. Well, so that's a different question. So 19 elongated mineral particle --</p> <p>20 Q. Then if elongated mineral particle's 21 confusing you, I'll take that out.</p> <p>22 So if we're trying to figure out if a 23 particle -- I don't care what size, I don't care if it's 24 elongated or not. If we're trying to figure out if a 25 particle is a cleavage fragment or an asbestosiform fiber,</p>	<p style="text-align: center;">Page 105</p> <p>1 Q. Okay. And, again, the basis of your 2 opinion that that's the definition of asbestosiform comes 3 from your coursework and undergraduate and graduate, 4 correct?</p> <p>5 A. Yes.</p> <p>6 Q. And sitting here today, you can't cite me 7 a single study in the peer-reviewed literature or from 8 any government organization that supports that theory, 9 correct?</p> <p>10 MS. SCOTT: Objection.</p> <p>11 MS. O'DELL: Objection. Form.</p> <p>12 A. So --</p> <p>13 BY MR. FROST:</p> <p>14 Q. I'm just asking for citations.</p> <p>15 MR. LAPINSKI: Let him finish.</p> <p>16 A. I cannot -- I cannot -- let me think how 17 to phrase this. Peer review, I have had discussions, 18 actually, with my -- a former committee member, Bill 19 Mull. He was on my Ph.D. committee, and we had several 20 discussions about impurities and things like that and 21 industrial minerals. He was an industry guy.</p> <p>22 And, basically, we talked about small 23 particles breaking off and how that could be of concern 24 in different ways. And then I've had discussions in 25 industry about, essentially, fine particles getting</p>

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<p>1 entrained in things with another company, one based here 2 in Cincinnati, not basically asbestosiform, not basically 3 asbestos, but there's graphite and biotite. 4 So no peer-review literature, but I've 5 had discussions in a general sense, but not specific to 6 talc, but with contaminants, small particles breaking. 7 Q. So the basis -- 8 A. So I think companies sometimes use 9 different -- it's actually common for companies to use 10 different words. They have internal vocabularies, even, 11 you know, so that might be the issue. 12 BY MR. FROST: 13 Q. So it's based off your coursework and 14 discussions with industry individuals but not any 15 peer-reviewed literature? 16 MS. SCOTT: Objection. 17 A. Yes. Correct. 18 BY MR. FROST: 19 Q. All right. We're going to move to 20 another definition. Okay? 21 A. Okay. 22 Q. I note in your report -- let me find 23 where it is. At the top, under the section that says 24 "Asbestos" on page 4. Second sentence, you say, 25 "Asbestos is a naturally occurring mineral that can be</p>	<p>1 definition, according to the paragraph? 2 A. I'm just saying that's what they define 3 those as. 4 Q. Do you believe you've included the whole 5 definition that ATSDR has of asbestos in your paper? 6 MS. SCOTT: Objection. 7 A. I believe it's consistent with a document 8 I've done. I was gonna say, there are other academic 9 classifications. Sometimes I know, in my classwork, it 10 was discussed like antigorite sometimes comes up. 11 Antigorite is actually something that's detected in some 12 of the documents as well. So antigorite can be, look 13 like it's asbestos, but it's not officially classified. 14 So there's some con -- if you look in the 15 older literature, there's some confusion. People will 16 also refer to other minerals, perhaps incorrectly, as 17 being asbestos. So it's -- historically, I think it can 18 be a term that is applied either too loosely or things 19 just haven't worked out, so... 20 BY MR. FROST: 21 Q. And the definition of asbestos in the 22 ATSDR, is that something you found yourself or was that 23 given to you by plaintiffs' counsel? 24 MS. SCOTT: Objection. 25 A. I looked at -- ATSDR is something that</p>
<p>1 in close proximity to talc in mines around the world." 2 Is asbestos a mineral? 3 A. I'm sorry. It should be mineral group. 4 Q. Okay. That was going to be my next 5 question. Asbestos is a defined group of minerals, 6 correct? 7 A. Yeah. It can be referred to that. 8 Q. Okay. Without looking at your report, 9 can you tell me what minerals fit the definition of 10 asbestos? 11 MS. SCOTT: Objection. 12 A. Tremolite, crocidolite, anthophyllite, 13 chrysotile, amosite. 14 BY MR. FROST: 15 Q. And in your report, you know, you list 16 them. I believe it's here on page 4. You list the 17 amphibole class includes, you know, amosite, 18 crocidolite, actinolite, anthophyllite and tremolite, 19 correct? 20 A. I'm sorry. Where? 21 MS. SCOTT: Here. 22 BY MR. FROST: 23 Q. Page 4. 24 A. Yeah. So, yeah, end of the second line. 25 Q. And you're relying on the ATSDR for this</p>	<p>1 I've used in the past for my publications in general, so 2 I'm familiar with them. So we use that in a variety of 3 ways to help frame our discussions in peer-review 4 articles and things like that. 5 BY MR. FROST: 6 Q. All right. I'm going to mark this next 7 exhibit. I think we're on six. 8 MS. SCOTT: Yes. 9 MR. FROST: Yep. 10 (Exhibit 6 was marked for 11 identification.) 12 MR. FROST: Do you need a copy? 13 MR. FERGUSON: I'll take it unless 14 anybody else wants one. 15 MS. O'DELL: Have you directed us to a 16 page? 17 MR. FROST: He was looking at his 18 references to make sure. I think he's 19 identifying that it's the same article. 20 A. I'm not -- I'm not sure if this is Item 21 Number 6. 22 BY MR. FROST: 23 Q. Well, here. I can speed this up. You 24 agree with me that this is an ATSD article, correct? 25 A. Yes.</p>

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<p>1 Q. Okay. Turn to -- actually, it's page 1. 2 It's a misnomer. It's decently into it, probably about 3 10 or 15 pages into it. As I said, the one is a 4 misnomer. Okay.</p> <p>5 MS. SCOTT: I have a -- 6 MR. FROST: Yeah. I was going to say, I 7 apologize for it being highlighted, but I'm 8 going to read the highlighted parts anyway, so 9 it will help guide us there. That was a 10 printing issue.</p> <p>11 BY MR. FROST:</p> <p>12 Q. Do you see where it defines, under 13 Section 1.1, "What is Asbestos"?</p> <p>14 A. Yes, I do.</p> <p>15 Q. Do you notice that its definition of 16 asbestos are "the fibrous varieties of tremolite, 17 actinolite and anthophyllite that occur naturally in the 18 environment"?</p> <p>19 MS. SCOTT: Objection.</p> <p>20 A. I see that, yeah.</p> <p>21 BY MR. FROST:</p> <p>22 Q. That's slightly different than what you 23 attribute the definition of asbestos from the ATSDR in 24 your report, right? You don't note that it's the 25 fibrous varieties of the amosite, crocidolite,</p>	<p>1 statement. 2 MR. FROST: Sure. 3 MS. SCOTT: Go ahead.</p> <p>4 BY MR. FROST:</p> <p>5 Q. Do you see the second highlighted portion 6 on that page? It starts at the bottom. "Asbestos 7 minerals consist of thin, separable fibers that have a 8 parallel arrangement. Nonfibrous forms of tremolite, 9 actinolite and anthophyllite are found naturally. 10 However, because they are not fibrous, they are not 11 classified as an asbestos mineral." That's different 12 than what you're telling us here, correct?</p> <p>13 A. Let me compare.</p> <p>14 Q. Well, that's what you just told us, that 15 you could have nonfibrous tremolite and it would still 16 be asbestos.</p> <p>17 A. I'm sorry. What was the question again?</p> <p>18 This is not consistent with what I have written?</p> <p>19 Q. I'm saying it's not consistent with what 20 you just told me. You just told me the fibers doesn't 21 really matter because you can have --</p> <p>22 A. Fibers --</p> <p>23 Q. So my question is: You're relying on -- 24 say you rely on the ATSDR as the definition for 25 asbestos, but your definition of asbestos, sitting here</p>
<p>1 actinolite, anthophyllite and tremolite, correct?</p> <p>2 A. Let me just double-check.</p> <p>3 Q. It's page 4.</p> <p>4 A. In two general classes. I omitted the 5 word "fibrous," but it seems that the minerals are 6 consistent.</p> <p>7 Q. Yeah, the minerals are consistent, but 8 isn't the omission of "fibrous" an important distinction 9 in the definition of what's asbestos and what isn't?</p> <p>10 MS. SCOTT: Objection.</p> <p>11 A. In the context of this situation, I 12 don't -- I don't think it exclusively applies because 13 you can mechanically produce particles that are -- meet 14 the criteria on the bottom of the last paragraph on page 15 4. So tremolite -- and actually, you know, on one hand, 16 IARC 2012 lists tremolite as a carcinogen in general. 17 So IARC is not -- I was consistent, but you're correct. 18 I did not use the word "fibrous."</p> <p>19 BY MR. FROST:</p> <p>20 Q. So you're not consistent, because you're 21 saying ATSDR defines asbestos, and then you need to put 22 them out. But you fail to leave out that these are 23 fibrous. I'll tell you why it's important. Do you see 24 the second highlighted portion?</p> <p>25 MS. SCOTT: Let me just object to the</p>	<p>1 today, is actually different than that of the ATSDR. So 2 it doesn't really support what you're saying today, 3 correct?</p> <p>4 MS. SCOTT: Objection. Misrepresents.</p> <p>5 A. No. I think that is a misrepresentation. 6 So I cited this, and the minerals are listed here are 7 the same minerals there.</p> <p>8 BY MR. FROST:</p> <p>9 Q. Okay.</p> <p>10 A. And then, based on my academic 11 experience, knowledge, these minerals are also, you 12 know, what I would list as well.</p> <p>13 Q. But that's not -- you didn't say they say 14 that certain types of these minerals can be asbestos. 15 The definition that you attribute, and you're talking 16 today about asbestos, is different than the -- you say 17 the ATSDR supports your definition of asbestos, but 18 yours is actually slightly different than theirs, right?</p> <p>19 MS. SCOTT: Objection. Misrepresents.</p> <p>20 A. I left out a word.</p> <p>21 BY MR. FROST:</p> <p>22 Q. And according to them, it's an important 23 word, because as the ATSDR says, "Because they are not 24 fibrous, they are not classified as asbestos minerals." 25 Do you agree?</p>

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<p>1 MS. SCOTT: Objection. 2 A. That's what's stated in the document. 3 BY MR. FROST: 4 Q. Okay. Let's move down to the third 5 paragraph under "Asbestos" in your report. Do you see 6 the -- I don't know. What sentence is it? Third 7 sentence starts, "However, non-asbestiform cleavage 8 particles can correspond to the definition of respirable 9 fiber as defined by WHO and, due to its morphology, can 10 have potentially dangerous health effects." Do you see 11 that? 12 A. Yes. 13 Q. Now, you don't have an opinion yourself 14 as to whether or not asbestiform can cause any disease. 15 You're not a doctor, right? 16 A. Correct. 17 Q. And you're relying on, you know, other 18 documents and things you've read for that statement? 19 That's correct? 20 A. Correct. 21 Q. Do you have any opinion on whether or not 22 the surface chemistries of cleavage fragments versus 23 asbestiform fibers are the same? 24 A. I'm not a surface geochemist. 25 Q. Okay. Do you agree with me that IARC has</p>	<p>1 morphology can have potentially dangerous health 2 effects? 3 A. Yes, I say those documents. 4 Q. Okay. Let's look at the NIOSH road map. 5 MR. FROST: Did you mark that yet? 6 (Exhibit 7 was marked for 7 identification.) 8 BY MR. FROST: 9 Q. Do you recognize this as the NIOSH 10 document that you were relying on for your statement? 11 MS. SCOTT: Jack, can you, just for my 12 ease, can you direct me to the citation within 13 the report? 14 MR. FROST: That I'm going to go to? 15 MS. SCOTT: Yeah. 16 MR. FROST: I'm going to page 5, or V, 17 which is the Executive Summary. 18 MS. O'DELL: Thank you. You're talking 19 about in the NIOSH document? 20 MR. FROST: Oh, in his? 21 MS. O'DELL: Yes. 22 MR. FROST: It's on page 4, third 23 paragraph down from Asbestos. It's NIOSH 2010, 24 IRSST 2012. 25 MS. SCOTT: Thank you.</p>
<p>1 ultimately determined that non-asbestiform cleavage 2 fragments actually are not or do not -- sorry. Let me 3 reform that. 4 Could we also agree that IARC has 5 determined that non-asbestiform minerals are not 6 carcinogenic? 7 MS. SCOTT: Objection. 8 A. I believe IARC 2012 lists tremolite as a 9 carcinogen. 10 BY MR. FROST: 11 Q. And do you know what level of carcinogen? 12 Do you know what category? 13 MS. O'DELL: Objection to form. 14 A. I don't specifically remember. I know 15 there are three categories that are relevant. There's 16 Group 1, and then Group 2-A and 2-B. Group 1 are known 17 carcinogens. 2-A is probable, and I think 2-B is 18 possible. But, again, I'm kind of -- 19 BY MR. FROST: 20 Q. That's not your -- that's not your field 21 of expertise? 22 A. That's not my area. 23 Q. And you also -- so you cite the NIOSH 24 2010. You also cite the IRSST 2012, correct, for your 25 proposition that these, the fragments of the same</p>	<p>1 A. I'm not seeing it in my list. 2 BY MR. FROST: 3 Q. Well, yeah. But if you look at page 4 of 4 your report, you cite to NIOSH 2012 for the proposition 5 that -- 6 A. Wait. Okay. 7 Q. -- non-asbestiform cleavage fragments can 8 have the same potentially dangerous health effects. If 9 you turn to page V, "Executive Summary." 10 A. Page V. Okay. "Executive Summary." 11 Q. The second paragraph, about halfway down, 12 there's a sentence that starts, "Asbestos fibers are 13 clearly a substantial health concern." 14 A. Let me find it. Okay. I found it. 15 Q. After that, it reads, "Further research 16 is needed to better understand health risks associated 17 with exposure to other thoracic-size EMPs, including 18 those with mineralogical compositions identical or 19 similar to the asbestos minerals in those that have 20 already been documented to cause asbestos-like disease 21 as well as the physiochemical characteristics that 22 determine their toxicity." Did I read that correctly or 23 close enough, anyway, I'm sure? 24 A. Yes, yes. Yep. 25 Q. Okay. So, again, NIOSH here isn't saying</p>

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<p>1 that -- NIOSH is not supporting the position you have in 2 your paper here, correct? NIOSH's determination is that 3 they can't make one. More research is necessary, right?</p> <p>4 MS. SCOTT: Objection.</p> <p>5 A. That is what's stated here.</p> <p>6 BY MR. FROST:</p> <p>7 Q. Let's turn back to the IRSST document. I 8 forget what we marked that as. I think it's 4. There 9 it is. If you can turn to page 37.</p> <p>10 A. Okay.</p> <p>11 Q. And, again, at the top nine 12 recommendations, it states, Since a conclusion cannot be 13 reached about the biological effects from the 14 distinction between a cleavage fragment and asbestos 15 fibers -- actually, I did not read that correctly. Let 16 me try again. 17 "Since a conclusion cannot be reached 18 about the biological effects from the distinction 19 between cleavage fragments and asbestos fibers," and 20 then it continues to say precautionary things. So, 21 again, they also haven't determined, as you state in 22 your report, that it has the same dangerous health 23 effects, correct?</p> <p>24 MS. SCOTT: Objection. Scope.</p> <p>25 A. It says what it says.</p>	<p>1 indicated, I thought there might be typos in the report. 2 Q. Okay. What's the typo?</p> <p>3 A. So, essentially, the difference should be 4 diversity. Talc forms in the earth in metamorphic 5 terranes, and the diversity is metamorphosed mafic and 6 ultramafic rock deposits show the complexity of talc 7 ores at different levels.</p> <p>8 Q. Okay. And --</p> <p>9 A. Sorry about that.</p> <p>10 Q. That's okay. Typos happens. 11 Your support for that is Berg 1977?</p> <p>12 A. Yes.</p> <p>13 Q. I'll mark Berg.</p> <p>14 A. It's e.g., Berg, so that's an example.</p> <p>15 Q. Yes. Well, look at the one example you 16 pointed to. 17 MR. FROST: Let me see if I can find a 18 copy. Let me see if I can find a copy where the 19 staple hasn't come out. We'll mark that one. 20 Do you all need one?</p> <p>21 MS. SCOTT: Sure.</p> <p>22 MR. FROST: Be careful of the staple. 23 It's pokey.</p> <p>24 MS. SCOTT: I appreciate that. 25 (Exhibit 8 was marked for</p>
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<p>1 BY MR. FROST:</p> <p>2 Q. Yes. They come to the same conclusion as 3 NIOSH, and that's, we don't know one way or the other. 4 More research needs to be done, right?</p> <p>5 A. Correct.</p> <p>6 Q. Other than these two, can you point me 7 right now to any other studies that actually support the 8 sentence you have here in your report that cleavage 9 fragments are the same, have the same dangerous health 10 effects as asbestos fibers?</p> <p>11 A. No.</p> <p>12 Q. All right. If we move down, further down 13 to page 4 of your report, the section called "Formation 14 of Talc deposits and inherent asbestos impurities."</p> <p>15 A. Okay.</p> <p>16 Q. The first sentence, "Talc forms in the 17 earth in metamorphic terranes, and the difference is 18 metamorphosed" -- I apologize. Can tell me how to 19 pronounce that word?</p> <p>20 A. Metamorphosed.</p> <p>21 Q. Metamorphosed. Okay. "And the 22 difference in metamorphosed mafic and ultramafic rock 23 deposits show the complexity of talc ores at different 24 levels."</p> <p>25 A. I'm sorry. That's a typo. As I</p>	<p>1 identification.)</p> <p>2 BY MR. FROST:</p> <p>3 Q. Do we agree this is the Berg '77 you 4 reference in your report?</p> <p>5 A. I'm not a hundred percent sure.</p> <p>6 Q. It also appears, if you look at 18 --</p> <p>7 MS. O'DELL: Excuse me, Doctor. Are you 8 finished? Did you finish with your answer?</p> <p>9 A. I'm not sure. So either I might have 10 misquoted something. Let's see. I don't think I -- I 11 don't think I have it. Let me --</p> <p>12 BY MR. FROST:</p> <p>13 Q. We can look at it during a break. We can 14 come back.</p> <p>15 A. I'll check. Berg had several.</p> <p>16 Q. I believe it's number 18.</p> <p>17 A. So I am not a hundred percent sure. I 18 might have misquoted --</p> <p>19 Q. Okay.</p> <p>20 A. -- this. Because, as I remember the 21 book, it was -- I honestly don't think I --</p> <p>22 Q. Looked different?</p> <p>23 A. Yeah. It was -- yeah. I think I've 24 looked at some of this before. It looks familiar, but 25 the thing that I'm thinking, I think I misquoted. I'm</p>

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<p>1 sorry.</p> <p>2 Q. If I were to tell you that talc isn't 3 even mentioned in this paper --</p> <p>4 A. Yeah. I mean, there's like -- the book I 5 had, there's images of mines that talks about, I think, 6 the Yellowstone mines, specifically. So I'm sorry about 7 that. I totally, totally missed that.</p> <p>8 Q. Okay. If we move down to the next 9 sentence, you state that "Italian mines, which Johnson & 10 Johnson and Imerys obtained talc for cosmetic 11 production, were ultramafic origin."</p> <p>12 A. Okay.</p> <p>13 Q. Is that true?</p> <p>14 A. I believe so.</p> <p>15 Q. Can we turn back to the IARC 2010? It's 16 the one with the orange cover. Go to page 283 to 84.</p> <p>17 A. Okay.</p> <p>18 Q. If you look at B, towards the bottom, it 19 says, "Talc derived from magnesium carbonites."</p> <p>20 A. Okay.</p> <p>21 Q. "Talc deposits formed from the alteration 22 of carbonite and sandy carbonite, such as dolomite and 23 limestone, are the most important in terms of world 24 production. Two types are recognized." And if you skip 25 down to two, it says, "Those derived from hydrothermal</p>	<p>1 think --</p> <p>2 Q. You certainly didn't include it in the 3 report, right?</p> <p>4 MS. SCOTT: Objection.</p> <p>5 A. I don't know. I forgot.</p> <p>6 THE WITNESS: Can we take a break?</p> <p>7 MR. FROST: Sure.</p> <p>8 VIDEOGRAPHER: We're now going off 9 record. The time is 12:21.</p> <p>10 (A recess was taken from 12:21 to 1:25.)</p> <p>11 VIDEOGRAPHER: We're now back on record.</p> <p>12 The time is 1:25.</p> <p>13 BY MR. FROST:</p> <p>14 Q. All right. Welcome back from lunch. We 15 were on page 4 of your report under "Formations of 16 Talc." And we talked about Italy. Let's move on to 17 Vermont. You say, "Vermont mines relevant to this 18 litigation are mafic and ultramafic origins." What's 19 your support for that statement?</p> <p>20 A. I'm sorry. Oh, bottom of 4?</p> <p>21 Q. Yeah, bottom of 4, moving on to 5.</p> <p>22 A. It's the geology of the area.</p> <p>23 Q. Do you believe there are mafic formations 24 of talc relevant to the Vermont mines used by Johnson & 25 Johnson and Imerys in this case?</p>
<p style="text-align: center;">Page 123</p> <p>1 alteration (including retrograde metamorphism) of 2 regionally *metamorphosed siliceous dolomites and other 3 magnesium-rich rocks." And then if you turn the page 4 over one, two, three, it says "Italy vouches own after 5 that."</p> <p>6 A. So this is information produced by 7 Luzenac?</p> <p>8 Q. Well, this is from IARC.</p> <p>9 A. It's in IARC, but they're citing Luzenac 10 as part of this, and each -- the occurrences of each 11 individual mine are -- location are not shown. IARC is 12 more of a health thing. I would not necessarily expect 13 a detailed analysis of a geology from an IARC monograph. 14 So...</p> <p>15 Q. Can you point to me to any geological 16 study that shows --</p> <p>17 MR. LAPINSKI: Counsel, let him finish 18 his answer first.</p> <p>19 A. So, I don't think that -- I don't know 20 what they are specifically relying on.</p> <p>21 BY MR. FROST:</p> <p>22 Q. Can you cite me any geological study that 23 shows that the Italian mines of Val Chisone were of 24 ultramafic origin?</p> <p>25 A. I forget the citations specifically. I</p>	<p style="text-align: center;">Page 125</p> <p>1 A. Yes.</p> <p>2 Q. And do you have a geological survey or 3 something else you're relying on for that?</p> <p>4 A. There are USGS reports and things like 5 that.</p> <p>6 Q. And they say mafic? They don't just say 7 it's an ultramafic belt?</p> <p>8 A. I believe so.</p> <p>9 Q. On page 5, kick down to the next 10 paragraph, the one that starts, "Asbestos minerals, 11 including chrysotile, tremolite and actinolite" -- I'm 12 sorry, "tremolite, actinolite and anthophyllite are 13 common in talc ores." What's your basis for the 14 statement, because it's uncited?</p> <p>15 A. It's common knowledge --</p> <p>16 Q. Can you point me to a --</p> <p>17 A. -- mineralogy.</p> <p>18 Q. Can you point me to a peer-reviewed 19 source that states that?</p> <p>20 A. Let see here.</p> <p>21 MR. LAPINSKI: Jack, while he's looking, 22 what was the statement from the report?</p> <p>23 MR. FROST: It's page 5, the first 24 sentence of the first full paragraph. The 25 "Asbestos minerals, including chrysotile,</p>

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<p>1 tremolite," et cetera. The first full 2 paragraph. 3 A. So reference 40, figure 3, is a 4 comparison I computed with silica activities. So, 5 essentially, it showed boundaries between talc and 6 chrysotile. And figure 2 shows temperature pressure 7 diagrams for chrysotile and talc. Figure 4 shows 8 comparison of computer phase equilibrium, experimental 9 data of Johannes, 1969. It shows chrysotile and talc 10 fields. So the significance of those fields is that 11 because of -- so those are fields where things, when, in 12 absolute equilibrium, those discrete phases are set or, 13 essentially, those are the phases that are stable. 14 The minerals are stable. But you can go 15 back, you know, because of geologic conditions are 16 variable, you can have metamorphism that heats up an 17 area or then cools down. You can then -- the geologic 18 conditions then can cross those phase boundaries, and 19 you essentially can have minerals that are stable for a 20 while and then revert. But, often, those reversions are 21 not necessarily complete. And to substantiate that -- 22 BY MR. FROST: 23 Q. Can I stop you right there? 24 A. Yes. 25 Q. Where does Chernoskey say that asbestos</p>	<p>1 something. That's not actually stated in this book, 2 correct? 3 MS. SCOTT: Object to the form. 4 A. The diagrams are -- that's how one can 5 interpret these diagrams. 6 BY MR. FROST: 7 Q. Okay. So -- 8 A. The field -- 9 Q. Does it say it's common? 10 MR. LAPINSKI: Counsel, let him finish 11 his answer, please. 12 MR. FROST: Sure. 13 A. So, you know, phase diagrams and the 14 interpretation of phase diagrams is something that 15 mineralogists and petrologists do all the time, and 16 basically, we often will refer to a given phase diagram. 17 People spend their entire lives perfecting phase 18 diagrams. That was typically in the '50s, '60, '70s and 19 '80s. 20 So people will actually refer to specific 21 phase diagrams by people. So one of my committee 22 members, when I was on my Ph.D., he had the best phase 23 diagram for quartz for some period of time. So we use 24 those phase diagrams. They're commonly used to 25 interpret mineral associations and assemblages.</p>
<p style="text-align: center;">Page 127</p> <p>1 minerals are common in talc ores? You just told me 2 about how, chemically, things form -- 3 A. The thermodynamic diagram. I'm sorry. 4 Go ahead. 5 Q. Yes. You just told me about how 6 chemically talc forms, but where does Chernoskey talk 7 about talc ores and relate that asbestos minerals are 8 common in talc ores? 9 A. So this is a mineralogical volume, so 10 this is a review volume, and basically, talc is a 11 mineral that is in talc ores and, therefore, is 12 relevant. 13 Q. So you're telling me how talc forms, and 14 where on the pressure and temperature scale, you know, 15 it can go back and forth to, you know, tremolite. But, 16 again, does that, just because something can form in 17 nature, where does it say that asbestos minerals are 18 common in talc ores? What you're telling me -- 19 A. Well, these are -- 20 Q. -- is scientifically how talc forms. 21 A. They're commonly associated 22 thermodynamically. 23 Q. And that says that in that book? 24 A. The diagrams indicate that. 25 Q. Okay. But this is you interpreting</p>	<p style="text-align: center;">Page 129</p> <p>1 To further answer the question, the -- I 2 believe it's the Veblen '79. Veblen and Buseck is the 3 science paper that shows the TEM associations, you know, 4 essentially, these intergrowths of talc and chrysotile. 5 And, essentially, that literature proves the -- 6 essentially, the interpretation of the assertion I said, 7 that you go between these regions that are of one 8 condition and another. You don't necessarily get the 9 full conversion because of the kinetics. Essentially, 10 either the reaction goes too fast or things basically 11 sort of get frozen in the rock, depending upon the 12 various conditions. 13 BY MR. FROST: 14 Q. Okay. So let's be careful with the 15 language we're using here. What you're giving me is a 16 generalization about how talc, the mineral, forms, and 17 what other minerals that might be associated with that 18 formation. Is that -- is that fair? 19 A. I would be hesitant about the word 20 "generalization." I mean, these are experiments. They 21 take years. 22 Q. Okay. But -- 23 A. And the data, you know, these boundaries, 24 people in the '50s, '60s and '70s, I mean, they put a 25 great deal of effort into establishing the boundaries.</p>

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<p>1 These are relevant for understanding larger processes of 2 metamorphism and understanding, you know, what -- 3 essentially what the history of the earth is. So the 4 diagrams aren't generalized. They're very, very 5 specific --</p> <p>6 Q. That's why I want you to listen very 7 carefully to what I'm asking you. We'll really step 8 back.</p> <p>9 All right. You agree with me, talc ore 10 is different than talc, right? Ore means it's the 11 deposit that is being mined, right?</p> <p>12 MS. O'DELL: Objection.</p> <p>13 A. The mineral talc is a primary --</p> <p>14 Q. But listen to the "ore."</p> <p>15 A. -- constituent --</p> <p>16 MR. LAPINSKI: Let him answer the 17 question, Counsel.</p> <p>18 A. So the mineral talc is a primary 19 constituent of ore, and you can't --</p> <p>20 BY MR. FROST:</p> <p>21 Q. And that's why I want you to listen to 22 me. I'm talking about ore. Ore means it's a talc 23 deposit that's being mined, right? You wouldn't find a 24 piece of talc you found in somebody's backyard and call 25 it ore, would you? Ore is a definition of a mineral</p>	<p>1 MS. SCOTT: Objection.</p> <p>2 A. You can have an ore of talc. The two are 3 not -- so go ahead. Proceed.</p> <p>4 BY MR. FROST:</p> <p>5 Q. So where in this book is it specifically 6 saying that talc ores, which are ores that have been, 7 you know, talc deposits that have been determined, as 8 you said, to be economically viable, will commonly be 9 associated with chrysotile, tremolite, actinolite, 10 anthophyllite?</p> <p>11 MS. SCOTT: Objection.</p> <p>12 A. The mineral constituency --</p> <p>13 BY MR. FROST:</p> <p>14 Q. So, again, you're --</p> <p>15 A. -- is -- minerals make up the talc ore. 16 So you can't separate -- you can't separate the ore from 17 the mineral when you're talking about how it's formed. 18 It's integral. I mean, it's absolutely integral to the 19 ore. You know, it would not be an ore if it didn't have 20 talc in it, right? It wouldn't -- you have to have the 21 required constituent in order for it to be an ore. 22 So, therefore, you know, every 23 petrologist in the world, every, you know, mineralogist, 24 you know, we refer to these thermodynamic diagrams that 25 have been worked out for, you know, now, some of them,</p>
<p>1 that's being mined. Do you agree with me there?</p> <p>2 MS. SCOTT: Objection.</p> <p>3 A. Yeah. Ore is not necessarily a mineral. 4 Ore can be multiple minerals.</p> <p>5 BY MR. FROST:</p> <p>6 Q. Sure. But ore is something that's being 7 mined, right?</p> <p>8 A. Yes. It's something of economic 9 interest --</p> <p>10 Q. Sure. So in order --</p> <p>11 A. -- as opposed to a primary material of 12 interest.</p> <p>13 Q. Okay. So in order to be an ore, it has 14 to be something that's being mined, right?</p> <p>15 MS. SCOTT: Objection.</p> <p>16 A. No. You can have ores that are not being 17 mined. They're just recognized as ore deposits. I have 18 a book of ore deposits.</p> <p>19 BY MR. FROST:</p> <p>20 Q. Okay. It's not this complicated, sir. 21 Just listen to what I'm saying. Talc ore means 22 something different than just a talc, you know, deposit, 23 a talc formation somewhere. A talc ore is something 24 that has been identified as a mineable source of talc. 25 Are we fair on that?</p>	<p>1 you know, decades. One was '69 or whatever. So I don't 2 think it's -- it's my professional opinion that these 3 thermodynamic diagrams adequately relate and describe to 4 the mineral phases that occur in talc ore.</p> <p>5 BY MR. FROST:</p> <p>6 Q. Okay. So you are making a 7 generalization, based upon the mineral phases, that all 8 talc ores --</p> <p>9 A. I would be hesitant to call it a 10 generalization. I mean, it's --</p> <p>11 Q. Can I finish my question, sir?</p> <p>12 A. Yeah. I'm sorry. Sorry. Go ahead.</p> <p>13 Q. So, again, can you give me a -- can you 14 give me a cite that shows that anthophyllite is common 15 in every talc ore mined across the world?</p> <p>16 MS. SCOTT: Objection.</p> <p>17 A. Where does it say that in the report?</p> <p>18 Q. "Asbestos minerals, including chrysotile, 19 tremolite and actinolite and anthophyllite are common in 20 talc ores."</p> <p>21 A. Are common, yes. You said every talc 22 deposit in the world.</p> <p>23 Q. Well, no. Show me where -- show me in 24 there where it says that anthophyllite is common in 25 every talc ore across the world.</p>

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<p>1 A. I think the interpretations of these 2 thermodynamic diagrams indicate that it's -- 3 Q. So it's purely theoretical? 4 A. No. It's experimental. 5 Q. Okay. 6 A. Is how the diagrams are designed. And 7 then, essentially, these are peer-reviewed articles that 8 are long-standing. So let me just check that to be 9 sure. Yeah, so there's, you know, these different -- so 10 Berman '88 is kind of one of these benchmark 11 thermodynamic databases, and we use these all the time 12 to understand and predict mineral stabilities and 13 understand and interpret the environments. 14 So, essentially, through the use of these 15 diagrams over time, we can interpret, you know, the 16 condition. So whether it's an ore or talc, you know, is 17 immaterial, the thermodynamics don't, don't really care. 18 Q. Well, don't you agree with me that 19 depending on the temperature, time and pressure, the 20 constituent rock of any particular deposit is going to 21 be different? I mean, that's what those phase diagrams 22 say, right? 23 MS. SCOTT: Objection. 24 A. No. The phase diagrams indicate that 25 things will be stable under different fields.</p>	<p>1 I mean, this is long recognized. 2 BY MR. FROST: 3 Q. See, that's why -- I fear you're not 4 listening to my questions. My question is: Depending 5 upon the thermodynamics that were in play in creating 6 any particular deposit, it will be different. And 7 depending on the differences, you will get different 8 mineral crystallization within the phases, correct? 9 MS. SCOTT: Object to the form. 10 A. Each situation may be slightly different. 11 But the -- to the blunt of the major phases, the 12 thermodynamics is relevant, and actually, you can 13 tweak -- you know, there's other programs that exist. 14 So, for example, on the igneous field, 15 there's a program called MELTS where you can fine tune 16 your models. And I think things were being in 17 development for these. You know, essentially, similar 18 types of things exist. There's like geochemist 19 workbench and other modeling programs that exist. 20 So, yes, you can -- things will change, 21 but these diagrams are generalizable in the sense that 22 they can be applied to multiple regions throughout 23 the -- throughout the world. 24 BY MR. FROST: 25 Q. And that's exactly what I asked you at</p>
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<p>1 BY MR. FROST: 2 Q. That's what I'm talking about. So you'll 3 have -- different minerals are stable under different 4 pressures and temperatures, right? 5 MS. SCOTT: Objection. 6 A. Not -- because of the kinetics, 7 essentially, this lag effect. You know, things are -- 8 that's not necessarily the case. So diamonds, you know, 9 the classic example that we use in courses, diamonds are 10 thermodynamically stable deep in the earth. They get 11 brought up and then they -- thermodynamically, they 12 should persist. But because of the kinetics in that 13 particular situation, the bonds of the carbon are 14 really, really strong. That diamond doesn't revert to 15 graphite. 16 So, essentially, the thermodynamics gives 17 us a guide. It is a very, very good guide. But when 18 things cross these boundaries, it takes time to 19 essentially equilibrate to the new conditions. And if 20 not enough time evolves geologically, things occur such 21 that you get these relic phases. And in the case of 22 talc ores or talc deposits or whatever you want to call 23 that, you can have essentially these relics or asbestos 24 minerals, chrysotile, for example, that co-occur. So 25 the thermodynamics basically is -- and people know that.</p>	<p>1 the very beginning is these are generalizable tables 2 that you can use to predict what's in a particular 3 deposit? 4 A. They're not tables. They're phase 5 diagrams. 6 Q. Or figures or phase diagrams. 7 A. Yeah. 8 Q. But so we're right back to where I 9 started, and that's these are generalization of how 10 phases work that you can use to predict what's in 11 something, but it's not necessarily saying there is this 12 constituent in this particular deposit, correct? 13 MS. SCOTT: Objection. 14 BY MR. FROST: 15 Q. How the phase operated will affect what's 16 in a particular deposit, right? 17 A. So it's really the combination of the 18 phase diagram. Plus, you know, I keep referring to 19 Veblen. 20 Q. Yeah. 21 A. So basically, yeah. So the phase diagram 22 is relevant when things are -- assumed to be absolutely 23 perfect when everything is in thermodynamic equilibrium. 24 Q. Yes. 25 A. And it is relevant when it's not. When</p>

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<p>1 things are not or when they're moving, things 2 essentially react and progress slowly. But you can have 3 incomplete or imperfect reactions as, you know, 4 illustrated by the one Buseck paper, the '79 paper.</p> <p>5 Q. So if you want to predict what's in a 6 particular deposit, you have to sort of know what the 7 time pressure, the metamorphic history of it, when it 8 formed, how stable it was, what it started from, what 9 the constituent beginning minerals were, you know. Then 10 you can apply that to a phase model?</p> <p>11 A. If you want to predict -- I'm sorry.</p> <p>12 Q. Yeah. And then you can apply it to the 13 phase model, right?</p> <p>14 A. No.</p> <p>15 MS. SCOTT: Objection.</p> <p>16 A. Well, There's multiple ways of predicting 17 what a deposit would be, and it's scale dependent, phase 18 dependent. It's dependent on the geology, and it's 19 dependent upon tectonics, as well. So there's many 20 things. So as a mineralogist, you know, one thing that 21 I would heavily rely on are the phase diagrams.</p> <p>22 BY MR. FROST:</p> <p>23 Q. Sure. But you have to know the specific 24 history of a formation if you want to do an accurate 25 prediction of what's in that particular thing. The</p>	<p>1 BY MR. FROST: 2 Q. Then you cite Evans 2004 as the basis for 3 that statement?</p> <p>4 A. Yes.</p> <p>5 MR. FROST: Let's mark this.</p> <p>6 MR. LAPINSKI: What number is this?</p> <p>7 VIDEOGRAPHER: Nine.</p> <p>8 MR. FROST: I told you I'd forget. 9 (Exhibit 9 was marked for 10 identification.)</p> <p>11 BY MR. FROST: 12 Q. Do you recognize this article? 13 A. Yes, I do. 14 Q. Can you point to me where this article 15 shows that talc and chrysotile are associated with each 16 other in deposits?</p> <p>17 A. The thing I was referring to is 18 concluding remarks. "Despite an up temperature 19 transition from lizardite to chrysotile at these 20 temperatures, the latter remains metastable." 21 So basically in giving these diagrams, 22 the thermodynamic diagrams, because that metastability, 23 that's the kinetic thing, that's what, essentially, the 24 chrysotile would potentially persist.</p> <p>25 Q. Okay. So he's not saying that. You're</p>
<p>1 phase diagrams are one of the things you'd look at, 2 right?</p> <p>3 MS. SCOTT: Objection.</p> <p>4 A. You would use phase diagrams to predict 5 potential, potentially what would be in text, because 6 you have this kinetic issue, right.</p> <p>7 BY MR. FROST:</p> <p>8 Q. Yeah, and that's based upon the geologic 9 formation, all the other factors that come into how that 10 formation was formed, temperature, pressure, time, you 11 know, all the things that we've talked about, right?</p> <p>12 A. You can use the phase diagrams. Also if 13 you have bulk chemistry data -- if you have bulk 14 chemistry data, you can use that bulk chemistry data, 15 sort of figure out and do models to see where things 16 are. So you don't necessarily have to know -- so you 17 can, you an model things, and that model would give you 18 some prediction.</p> <p>19 Q. If you look at the next sentence, it 20 says, "Talc and chrysotile are associated with each in 21 talc deposits at the micrometer and nanometer scale 22 making the separation impossible during the mining and 23 manufacturing process." Do you see that?</p> <p>24 A. Yes.</p>	<p>1 just interpreting that from this article? That's not 2 his conclusion? That's yours?</p> <p>3 A. That is the interpretation of the 4 thermodynamic, you know, this article. And I think that 5 data supports it as does other, you know, these 6 diagrams.</p> <p>7 Q. What I'm saying is that's not his. 8 That's not Evans' conclusion. That's you interpreting 9 data within the Evans report, correct?</p> <p>10 MS. SCOTT: Objection.</p> <p>11 A. Yes, but I'm citing that.</p> <p>12 BY MR. FROST:</p> <p>13 Q. Okay. Let's move on. The next 14 paragraph, the one that starts "Metamorphic systems." I 15 believe it's the last sentence. It says, "Reactions can 16 also progress for some period and then revert to 17 asbestiform mineral chrysotile," and it continues 18 because it changes.</p> <p>19 So, hopefully, you'll agree with me on 20 this one. For it to revert back to chrysotile, it would 21 have to have started as chrysotile, correct?</p> <p>22 A. So that is a possibility. You can go 23 from -- that's what the stability fields are all about. 24 So you can start off as chrysotile. You can cross that 25 phase boundary, and then it can revert back if the</p>

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<p>1 conditions change back. And, actually, we know this in 2 metamorphic rocks, that, essentially, the phase 3 assemblage can basically go back and forth, back and -- 4 it can revert. So I'm specifically -- I'm talking about 5 reverting on that phase boundary.</p> <p>6 Q. Yes, but it can only revert back to 7 chrysotile if it started at chrysotile, right?</p> <p>8 A. So that might be a poor phrasing of the 9 word, but essentially it's not an inaccurate phrasing. 10 So when I wrote this, I was thinking of these phase 11 diagrams.</p> <p>12 Q. What I'm getting at is, let's say it 13 started as, you know, a serpentinite or an anthophyllite 14 converted to talc. It's not going to then revert back 15 to a different crystal, right? It's not going to -- 16 it's not going to go from anthophyllite to talc to 17 chrysotile?</p> <p>18 A. Based on the geologic history, there's 19 multiple pathways. So it won't revert to the same magic 20 crystal, if that's what you're implying.</p> <p>21 Q. So the way -- and I agree with you. It's 22 very inartfully written here. So you say, "Reactions 23 can progress for some period of time and then revert to 24 the mineral chrysotile." So the reactions of talc can 25 only revert back to chrysotile if that's where they</p>	<p>1 completely new chemical structure of chrysotile, 2 correct?</p> <p>3 A. Correct. Not all the time, yeah.</p> <p>4 Q. Okay. Thank you. Bear with me a second 5 here. Okay. Next paragraph down after you cite the 6 various Imerys documents, you said, "A 1977 thesis by 7 Barry Seymour (JNJ 272469) describes the complex 8 mineralogical development of the specific ore." So are 9 you talking about the specific ore in the Seymour paper 10 or are you talking about the specific ore at issue in 11 this case?</p> <p>12 A. I forget. Can we bring that document up?</p> <p>13 Q. Yeah, I can get you Seymour.</p> <p>14 MR. FROST: Would you like a copy?</p> <p>15 MS. SCOTT: Yes, please. Thank you. (Exhibit 10 was marked for identification.)</p> <p>16 MS. SCOTT: Are you marking this?</p> <p>17 MR. FROST: Yes, I forget what number it is.</p> <p>18 MS. SCOTT: Ten.</p> <p>19 MR. FROST: Ten.</p> <p>20 A. I think "specific" is -- I think it might be a typo.</p>
<p>1 started from, correct?</p> <p>2 MS. O'DELL: Objection to form.</p> <p>3 A. So let me just read the sentence before 4 here, because I think -- "Reactions may also be 5 incomplete, meaning there may not be enough geologic 6 time or other chemical component to drive the reaction 7 to completion as discussed in Deer, Howie and Zussman. 8 Reactions can also progress for some period of time, 9 then revert to asbestiform mineral chrysotile because of 10 changes in geologic conditions."</p> <p>11 So, in part, I think I'm referring to 12 Deer, Howie and Zussman. I don't think I've said 13 anything inaccurate there. It's not exclusive to --</p> <p>14 BY MR. FROST:</p> <p>15 Q. I'm trying to clarify --</p> <p>16 A. You know, you can have reactions, you 17 know, that's not complete.</p> <p>18 Q. So what I'm getting at, it's a really 19 simple question. The reversion won't always be from 20 talc to chrysotile, right? It will only revert back to 21 chrysotile if that's where it started. Do you agree 22 with me there? So while it may be correct that if it 23 starts as chrysotile, partially transforms to talc and 24 reverts back to chrysotile, that makes sense. But if it 25 starts as something else, it's not going to revert to a</p>	<p>1 BY MR. FROST: 2 Q. Okay. 3 A. So as I look at this document, I 4 basically remember looking at the introductory material 5 in it. So --</p> <p>6 Q. You'd agree with me it's a thesis about 7 the East Johnson mine?</p> <p>8 A. I would have to reread the document.</p> <p>9 Q. If I would represent to you it's about 10 the East Johnson mine and if you actually look at the 11 abstract --</p> <p>12 A. Foley and Johnson.</p> <p>13 Q. And you'd also agree with me the East 14 Johnson mine was never one that was used for cosmetic 15 talcum powder by Johnson & Johnson, correct?</p> <p>16 MS. O'DELL: Objection to form.</p> <p>17 A. It may not have been used, but it is in 18 the same general geology. And, certainly, in geology, 19 it is part of the same general terrane, so therefore, 20 it's not exactly like the hammer, the Rainbow mine, but 21 it is relevant because it's geologically connected in 22 the sense of the terranes.</p> <p>23 BY MR. FROST:</p> <p>24 Q. So you're telling me that it has the same formation as the deposits in the Hammondsburg and</p>

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<p>1 Rainbow mines or are you just saying --</p> <p>2 A. I don't remember specifically, but</p> <p>3 essentially the geology, so...</p> <p>4 Q. The second half of my question, or is it</p> <p>5 more that you're basing it on they're all part of the</p> <p>6 ultramafic belt, the Appalachian ultramafic belt that</p> <p>7 runs from Quebec through Georgia?</p> <p>8 A. It is more the general geologic</p> <p>9 association.</p> <p>10 Q. Okay. That's all I was going to ask</p> <p>11 about that.</p> <p>12 A. Page 15 is geologic map of Vermont. It</p> <p>13 shows things being connected.</p> <p>14 Q. Well, it shows the Appalachian ultramafic</p> <p>15 belt running through Vermont, correct?</p> <p>16 A. Yes.</p> <p>17 Q. Turn to page 6 of your report, the</p> <p>18 "Common toxic metals of interest." So before we start</p> <p>19 looking at any specific documents, will you agree with</p> <p>20 me that seeing metals at certain levels in deposit</p> <p>21 samples is different than seeing metals in certain</p> <p>22 levels in a finished talcum powder product?</p> <p>23 MS. SCOTT: Objection.</p> <p>24 A. It can be metals in processing. It could</p> <p>25 be reduced or they could also be increased depending</p>	<p>1 define the geology as a whole, you know. So they want</p> <p>2 to know where ore is and where ore is not, if there is</p> <p>3 problematic areas. So, for example, the mine I work</p> <p>4 with in Nevada, they have a formation, Stebbins Hill</p> <p>5 unit that they avoid, because it's got all kinds of</p> <p>6 problematic stuff in it.</p> <p>7 Q. And that's probably a pretty good</p> <p>8 example. I take it they -- every now and again, they</p> <p>9 take samples from the problematic portion of that mine,</p> <p>10 correct?</p> <p>11 A. They sample everything as they go. So</p> <p>12 I've seen datasets of 20,000 from a single -- single</p> <p>13 level.</p> <p>14 Q. So what I'm getting to is just because</p> <p>15 you have a test of -- you know, a test coming back from</p> <p>16 a mine doesn't necessarily mean that the rock associated</p> <p>17 with that test makes it into the final product, right?</p> <p>18 MS. SCOTT: Objection.</p> <p>19 A. I don't -- there's no -- I didn't see any</p> <p>20 specific chain of custody, so I can't, you know.</p> <p>21 BY MR. FROST:</p> <p>22 Q. I'm talking from a general perspective.</p> <p>23 They're sampling a lot more of the rock than that</p> <p>24 ultimately ends up in a final product in a mine,</p> <p>25 correct?</p>
<p>1 upon the details of the processing. I don't think I saw</p> <p>2 any documents, although I requested documents, any</p> <p>3 documents about the detail, you know, before -- before</p> <p>4 and after, kind of full throughput, you know, as far as</p> <p>5 watching a specific sample go through, but, yeah.</p> <p>6 BY MR. FROST:</p> <p>7 Q. You'd also agree with me, too, that</p> <p>8 sometimes mine samples aren't necessarily from the ore</p> <p>9 that is used in the final product. It might be from a</p> <p>10 boundary. It might be from a surrounding rock, a black</p> <p>11 wall. Just because you see something in a sample</p> <p>12 doesn't necessarily mean that that's the ore that is</p> <p>13 then converted over into the final powder as well,</p> <p>14 correct?</p> <p>15 MS. SCOTT: Objection.</p> <p>16 MS. O'DELL: Object to form.</p> <p>17 A. I am confused by the question. As I</p> <p>18 think I understand you, can contaminants or other</p> <p>19 material that is not the primary ore be included in the</p> <p>20 ore processing?</p> <p>21 BY MR. FROST:</p> <p>22 Q. Other way around. When you sample a</p> <p>23 mine, when you drill sample holes, they're not just</p> <p>24 drilling the mineable ore body, correct?</p> <p>25 A. Generally correct. They're looking to</p>	<p>1 MS. SCOTT: Objection.</p> <p>2 A. So there's a difference between coring to</p> <p>3 define your geology and then mining --</p> <p>4 BY MR. FROST:</p> <p>5 Q. Uh-huh. That's what I'm saying.</p> <p>6 A. -- to get your product.</p> <p>7 Q. So just because you find something here</p> <p>8 doesn't necessarily mean that that ends up, that</p> <p>9 particular test sample ends up in the final ore that</p> <p>10 makes it to the grinding process for final talc,</p> <p>11 correct?</p> <p>12 MS. SCOTT: Objection. Speculation.</p> <p>13 A. Yeah. You don't -- that would be</p> <p>14 speculative or you -- it doesn't mean it doesn't.</p> <p>15 BY MR. FROST:</p> <p>16 Q. But, again, that's why --</p> <p>17 A. So --</p> <p>18 Q. Okay. I'll ask you this way. Does every</p> <p>19 single sample that's ever tested in a mine --</p> <p>20 MS. O'DELL: Excuse me. You guys just --</p> <p>21 MR. FROST: Sure.</p> <p>22 MS. O'DELL: If you'd give him a chance</p> <p>23 to finish.</p> <p>24 MR. FROST: I thought he did finish his</p> <p>25 question.</p>

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<p>1 MS. O'DELL: I don't think he did. I'm 2 sure he needs to give you an opportunity to 3 finish as well --</p> <p>4 MR. FROST: I'm sorry. I thought you had 5 finished your question.</p> <p>6 MS. O'DELL: But you're talking over each 7 other. In fact, you just interrupted me.</p> <p>8 A. That's why I was distracted. Can you 9 restate your question again, please?</p> <p>10 BY MR. FROST:</p> <p>11 Q. Sure. So my question is: Every sample 12 that comes out of a mine doesn't -- you know, everywhere 13 they're sampling, they're doing core outside of the talc 14 body. They're coring through. They're trying to find 15 areas of ore they don't use. Do you agree with all 16 these as just general mining concepts?</p> <p>17 A. Generally.</p> <p>18 Q. Okay.</p> <p>19 A. But it -- go ahead.</p> <p>20 Q. And you also agree with me that, 21 generally, mines aren't just sampling from the ore they 22 are using to put into a final product, correct?</p> <p>23 MS. SCOTT: Objection.</p> <p>24 A. Correct. But that doesn't mean that -- 25 that doesn't mean that you're not, when you sample and</p>	<p>1 hypothetical questions here. I'm trying to get down to, 2 and again, as part of the mining process, you sample to 3 determine which parts of the ore you avoid and which 4 parts of the ore you mine, right?</p> <p>5 A. Yes. That is a common procedure.</p> <p>6 Q. So just because a sample comes up and has 7 a hit of a particular chemical in it doesn't necessarily 8 mean that they then use that as a final product, because 9 part of sampling is to tell you what parts of the mine 10 to avoid, right?</p> <p>11 MS. SCOTT: Objection.</p> <p>12 A. Potentially. But there's reasonable 13 risk. If you find it in one spot, it might be near 14 another spot. When you have high concentrations, such 15 as those observed, it's a natural. Essentially, you 16 have gradients that occur over some degree of space. So 17 you, you know, so arsenic might have, you know, a 18 thousand parts per million in one spot and be zero in 19 another, but without, you don't know where to mine, 20 where that's cut -- cut off.</p> <p>21 BY MR. FROST:</p> <p>22 Q. But, again, but my question's very easy, 23 and it's just because you see something here doesn't 24 mean it's there, right? You'd have to know more?</p> <p>25 MS. SCOTT: Objection.</p>
<p>1 find things like asbestos, it doesn't negate that they 2 exist.</p> <p>3 BY MR. FROST:</p> <p>4 Q. Okay. Here's my next question: Based on 5 that, just because a sample comes back with a particular 6 level of some, say, heavy metal, you know, just because 7 some sample in a mine somewhere came up with a level of 8 chromium, for example, based on that sample, you can't 9 say, without knowing more, that that particular area 10 where the sample came from ultimately ended up in talcum 11 powder that consumers used, right?</p> <p>12 MS. SCOTT: Objection. Calls for 13 speculation.</p> <p>14 A. So, yeah, I think it is speculative, 15 because you're talking about one powder. There's many, 16 many analyses of things. So you're not -- you're not 17 gonna spend a huge amount of time on things that are not 18 directly related to your work, because, you know, you do 19 have to keep costs in mind. So, you know, if -- you 20 know, there were numerous, numerous, numerous analyses 21 of arsenic, for example, in some of the Vermont 22 material. So, you know, some of those were related to 23 ores. And let's look to --</p> <p>24 BY MR. FROST:</p> <p>25 Q. We don't need to. I'm asking very just</p>	<p>1 BY MR. FROST:</p> <p>2 Q. Right?</p> <p>3 A. Correct.</p> <p>4 Q. Okay. And just because something shows 5 up here doesn't necessarily mean it's going to end up in 6 what becomes the mill feed, right?</p> <p>7 MS. SCOTT: Objection.</p> <p>8 A. Correct. But there's always the 9 potential for it to do so.</p> <p>10 BY MR. FROST:</p> <p>11 Q. Okay. And you also agree with me that 12 beneficiation is one way that mines specifically for 13 talc can clean out some of the accessory minerals and 14 some of the heavy metals, right?</p> <p>15 MS. O'DELL: Object to the form.</p> <p>16 A. Beneficiation works when applied 17 properly. I'm not a mineral engineer, so I don't fully 18 think I can comment on details of that.</p> <p>19 BY MR. FROST:</p> <p>20 Q. Okay. But you agree with me that 21 beneficiation is one way in which you can reduce the 22 amount of, say, a heavy metal that ends up in a final 23 product, correct?</p> <p>24 MS. SCOTT: Objection.</p> <p>25 A. I would rather not comment, so the --</p>

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<p>1 BY MR. FROST: 2 Q. You comment in your report specifically 3 about the beneficiation going on at the Vermont mines. 4 So is that not something you're going to opine on here? 5 MS. SCOTT: Do you want to point him to 6 the place in his report? 7 A. Yeah. Sorry. Is this the Colorado mines 8 study? 9 BY MR. FROST: 10 Q. Yeah, it might be. I don't have it right 11 in front of me. It's something that I think we can get 12 back to later. But you agree with me as a general 13 mining concept -- 14 A. I'd like to see the document. 15 Q. Yeah. Well, I'm asking you general 16 concepts, because you are giving opinions about the 17 mining that was going on at these mines, correct? 18 A. Yes. 19 Q. And beneficiation is one thing that mines 20 use, correct? 21 A. Yes. 22 Q. And beneficiation can be used to reduce 23 the amount of contaminants that are in an ore, correct? 24 MS. SCOTT: Objection. 25 MS. O'DELL: Objection to form.</p>	<p>1 beforehand, and basically, they walked away with \$50,000 2 worth of aquamarines. So gem mining certainly is 3 something that you could selectively mine. 4 Gold is another example where there are 5 deposits in Nigeria where, essentially, groups of women 6 go out and they selectively, you know, go through, 7 basically pan and find gold nuggets. I think it's -- 8 you know, it really depends on how you say selective 9 mining, and so the thing that, you know -- did I answer 10 that? 11 Q. I'm listening to your explanation, yeah. 12 A. Okay. So selective mining, I think in 13 the context of talc deposits, is -- I really don't think 14 you can effectively do it. So with respect to Chinese 15 ore that is supposedly hand sorted -- let me find where 16 that section is. So if you're -- yeah, as I understand 17 it, they basically look at the rock and say it's okay. 18 There's nothing wrong. 19 Well, there's several issues with that. 20 So, one, the human eye cannot detect either metals or 21 small asbestos fibers by simply looking at, at the rock, 22 at the surface of the rock, right? So, essentially, you 23 can do it. You can visually inspect the outside of the 24 material, and you would not be able to visibly see if 25 there's a thousand parts per million of nickel or</p>
<p>1 A. Reduce, but not purify. 2 BY MR. FROST: 3 Q. It can be used to reduce, correct? 4 MS. SCOTT: Objection. 5 A. Potentially, if executed well. 6 BY MR. FROST: 7 Q. Okay. And selective mining is another 8 tactic that can be used in an ore to try to reduce 9 contaminants, correct? 10 MS. SCOTT: Objection. 11 A. No. There's -- the selective mining was 12 an issue, significant issue that I found. And the 13 reason -- 14 BY MR. FROST: 15 Q. I'm asking in general, sir. Can 16 selective mining -- 17 A. In general, I don't -- you know, I think 18 it really depends on what you mean by "selective 19 mining." So I think a good effective example of 20 selective mining would be gemstones. So you find a 21 pegmatite. You go -- actually, there was a group that 22 did this a couple years ago. They went to a site in 23 Colorado. They basically looked at the geology. They 24 selectively looked at specific lithologies. They were 25 able to narrow it down. They did a lot of research</p>	<p>1 chromium or some other element. 2 And then, in addition, you can have 3 inclusions of stuff in the rock that you could not -- 4 you just physically can't see. So there's a 5 hypothetical risk that you can have inclusion of, let's 6 say, sulfides, a lot of sulfides, a nodule that has a 7 lot of sulfides in it, that, in this chunk, you would 8 not be able to visually discern what was there. So and 9 then, you know, so you basically -- and so that's the 10 sorting, as I understand it, with China. 11 Q. Do you agree with me that -- so, is it 12 your opinion that selective mining for talc can never 13 work or do you agree with me that selective mining is 14 one of the tools that a mine can use to help to purify 15 its ore? 16 A. I would say in the context of -- in the 17 context of talc, selective mining is not very effective, 18 because the scale of the issue is with the ore. 19 Q. Okay. Other than your personal opinion, 20 can you cite to me any peer-reviewed or scientific 21 source that supports that? 22 MS. SCOTT: Objection. 23 A. I don't think there's any peer-reviewed 24 literature that I can think of. I think it's just 25 common sense. You know, everyone knows that you can</p>

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<p>1 hide -- you can have inclusions and impurities in an 2 ore. And if you're only using your eyes and you're only 3 hand sorting things -- plus there's human error. 4 There's just simply human error. If someone, you know, 5 is, you know -- they'll just make mistakes. 6 And then the other issue I think is 7 unclear, I didn't find any degree of training, you know, 8 or no description of the training methods that were used 9 for hand sorting. So an ore-controlled geologist is a 10 common, common position in mines. 11 One of my former students, he's an 12 ore-controlled geologist in Stillwater, and it takes 13 three months of training for them to delineate the ore. 14 So that is an example of selective mining, but there's a 15 high level of effort that goes into it, and the goal is 16 platinum. And, basically, the way that particular mine 17 is set up is to extract the platinum. They're not 18 really -- they don't have to worry about other 19 contaminants that might be present. 20 BY MR. FROST: 21 Q. Okay. I'm going to stop you because we 22 keep getting off on a lot of these tangents. My 23 question was: Can you point me to any mining studies or 24 anything else that say that selective mining does not 25 work for talc?</p>	<p>1 basis of this is Van Gosen 2004. I'm going to mark 2 that. 3 A. Okay. It's the environmental earth 4 science paper? 5 Q. What's that? 6 A. It's the environmental earth science 7 paper? It's the journal? 8 Q. Yes. Environmental Geology, 2004. 9 A. Oh, yeah. That's currently -- the 10 journal name changed. I had a few papers in it. Is 11 there a copy of it? 12 Q. The court reporter's marking it. 13 (Exhibit 11 was marked for 14 identification.) 15 BY MR. FROST: 16 Q. Since we've already established we're 17 talking about the same paper, can you show me anywhere 18 in this paper that Van Gosen specifically speaks about 19 any of the mines that you've listed here in your report? 20 A. Correct. No specific mine is listed. It 21 talks about Vermont talc, in general. 22 (Exhibit 12 was marked for 23 identification.) 24 BY MR. FROST: 25 Q. I've now marked the Ross article. It's</p>
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<p>1 A. I know of no peer-review publications. 2 Q. Okay. Thank you. Turn to page 7 of your 3 report. It's 7 into 8, actually. You know, we start 4 talking about the various regions that talc is sourced 5 from, correct? 6 A. Yes. 7 Q. Okay. On page 7 to 8, you list various 8 time frames and various mines, you know, from which you 9 believe. I take it this came from your review of the 10 documents, the timeline that you put forth here? 11 A. Just give me a moment to review. 12 Q. The easier way to ask is: Is this 13 something that was provided to you or is this something 14 that you came up with yourself? 15 A. I came up with it. 16 Q. Okay. So at the very end of it, so we 17 talked about all the various mines, and afterwards, you 18 have a sentence that reads, "These mines are known to 19 have impurities associated with talc, including toxic 20 metals, chrysotile, and amphibole asbestos." Do you see 21 that? 22 MS. O'DELL: Objection to form. 23 A. Yes. 24 BY MR. FROST: 25 Q. Okay. So the first thing you note as the</p>	<p>1 Ross 74. "Environmental Health Perspectives." She's 2 already marked it for you. 3 A. Oh. 4 Q. Same question. Can you show me where in 5 this article it details any mine actually used by 6 Johnson & Johnson? 7 MS. SCOTT: Objection. 8 A. I don't see mention of a specific mine. 9 BY MR. FROST: 10 Q. Next, I'm going to mark -- I'm sorry. 11 A. Go ahead. 12 Q. I didn't mean to cut you off if you 13 weren't done. Next I'm going to mark Document 14 JNJ 000521616, the first page of it, anyway. 15 (Exhibit 13 was marked for 16 identification.) 17 BY MR. FROST: 18 Q. Do you remember looking at this document? 19 A. Actually, I'm unsure. 20 Q. Okay. 21 A. I might have used the wrong number. 22 Q. Okay. But you agree with me this doesn't 23 talk about any of the mines, certainly, right? 24 A. Right. Yeah. 25 MS. SCOTT: Object to form.</p>

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<p>1 MS. O'DELL: Object to form. 2 A. Correct. I -- I haven't -- I don't think 3 I've seen this. I think I used -- there's a typo or 4 something in there. Sorry. 5 BY MR. FROST: 6 Q. No. That's okay. That's why we're -- 7 that's why we're doing this. 8 All right. If you turn to page 14 of 9 your report under, "Evidence that Asbestos Occurred in 10 Defendants' Mines." The first sentence reads, "The 11 documents I reviewed provided strong evidence that the 12 talc used by Imerys and Johnson & Johnson to produce 13 Johnson's Baby Powder and Shower to Shower came from 14 mines that contained asbestos minerals or fibrous talcum 15 in an asbestosiform habit." Did I read that right? 16 A. Yes. 17 Q. And looking back, you cite the same exact 18 documents as we just -- as the last sentence, correct? 19 MS. SCOTT: Objection. 20 A. It's in the report. 21 BY MR. FROST: 22 Q. Yeah. Okay. And you'd agree with me, 23 you know, that these materials don't actually relate 24 directly to the mines used by Johnson & Johnson as 25 identified on pages -- I believe it's 7 and 8 of your</p>	<p>1 as amphibole and grit and stuff like that, correct? 2 A. So, for example, the one ending in 87231, 3 "Battelle Memorial Institute document dated 1958, 4 indicated the presence of tremolite in the talc, 5 commonly at levels ranging from 1-3 percent. That 6 document also studied the abrasiveness and grit of 7 Italian talc." So that's something, that the grit is in 8 addition to the finding of tremolite. 9 Q. Do you agree with me that none of these 10 documents actually find asbestos or define that they 11 have found asbestos in any of the ore from Italy? 12 MS. O'DELL: Object to the form. 13 A. I would want to double-check all of 14 these, but they do two things. The last one, presence 15 of tremolite and actinolite and, also, tremolite and one 16 that I just mentioned. And tremolite is a -- recognized 17 as a carcinogen by IARC 2012. 18 Q. Can you show me anywhere in your report 19 that you note that tremolite is found by IARC to be a 20 potentially dangerous mineral, you know, a human 21 carcinogen? 22 (Exhibit 14 was marked for 23 identification.) 24 A. I can't find a specific example.</p>
<p>1 report, right? 2 MS. SCOTT: Objection. 3 MS. O'DELL: Objection to form. 4 A. I would have to read -- double -- I would 5 want to double-check each individual document. 6 BY MR. FROST: 7 Q. But, certainly, the ones we just looked 8 at -- 9 A. The one we just looked at. 10 Q. -- certainly don't support that, right? 11 A. Correct. 12 Q. Okay. All right. Move on to the next 13 section of the report. It's "Mines in Italy," pages 8 14 to 9, I believe, of your report. 15 A. Oh, 8 to 9. 16 Q. Then on page 9, it's the third paragraph. 17 You have, "Based on what I have reviewed, I have 18 sufficient basis to conclude that Italian ore was of 19 poor quality," correct? 20 A. Yes. 21 Q. What are you talking about there when you 22 say "poor quality"?</p> <p>23 A. That I'm referring to the findings of the 24 items listed below. 25 Q. These items are talking about things such</p>	<p>1 BY MR. FROST: 2 Q. And you're not qualified to say whether 3 or not a particular mineral would be harmful, you know, 4 as a human carcinogen. You have no basis by which to 5 say that's correct or not correct, right? 6 MS. SCOTT: Objection. 7 A. Correct. I'm not a medical. 8 BY MR. FROST: 9 Q. Okay. All right. What number was that? 10 Fourteen. So I've just marked -- I've given you a 11 binder marked 14. It has tabs 1 through 5. I'm sorry. 12 I have yours. I apologize. 13 So these are the various documents you 14 cite in your report. So let's look through each of 15 them. We'll start with 1. 16 MS. O'DELL: Let's get this one back 17 together. 18 MR. FROST: Oh, did it come apart? 19 MS. O'DELL: Yes. Is there a particular 20 part of his report that these came from or are 21 you jumping around? 22 MR. FROST: Yes. No, we're talking about 23 the report now. They're page 9 to 10. These 24 are the documents that support the ore-is-of-poor-quality statement.</p>

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<p>1 BY MR. FROST: 2 Q. So this first one, can you tell me 3 anywhere in the Battelle report that starts JNJ 87868, 4 that they note the trace amounts of amphibole are 5 asbestosiform in any way? 6 MS. O'DELL: Object to the form. 7 A. No, I don't. 8 BY MR. FROST: 9 Q. Okay. Turn to tab 2, which is -- the 10 document starts JNJ 87231. Same question. Can you tell 11 me anywhere in here where, I believe it's Battelle 12 again, identifies finding any asbestosiform mineral? 13 MS. SCOTT: Objection. 14 A. So tremolite is noted as trace on page 4 15 here. 16 BY MR. FROST: 17 Q. Does it note the trace tremolite has 18 asbestosiform? 19 A. No, it does not. 20 Q. So you'd have no way to tell whether or 21 not it's asbestosiform or non-asbestosiform based on this 22 document? 23 MS. O'DELL: Object to form. 24 MS. SCOTT: Objection. 25 A. The -- it has been so, "The amphibole</p>	<p>1 BY MR. FROST: 2 Q. But it's JNJAZ55_6104. I think it starts 3 at 6103, but 6104 is the letter. The one, two, three -- 4 fourth paragraph down says, "I have also checked into 5 the mineralization of that part of the territory, and 6 the minerals which show in the valley are: Talc, 7 pyrite," magnesite -- sorry, "magnetite, calcite, 8 dolomite, apatite, clinochlore," sorry, "chrysotile," 9 and then, you know, talks about others, including 10 tremolite, actinolite, correct? 11 A. Yes. 12 Q. And this is talking about the valley. 13 There is nothing in here that indicates that this is 14 talking specifically about the Fontaine mine, correct? 15 MS. SCOTT: Objection. 16 MS. O'DELL: Objection. 17 A. It's unclear. 18 BY MR. FROST: 19 Q. Dr. Ashton also isn't saying that any of 20 these minerals have been found in the ore coming from 21 the Fontaine mine, correct? 22 MS. O'DELL: Objection to form. 23 MS. SCOTT: Objection. 24 A. Correct, but mineralization of that part 25 of the territory. So...</p>
<p>1 component has been established to be the variety of 2 tremolite." Yeah. It does not say that it is asbestos 3 form, but it is tremolite. 4 BY MR. FROST: 5 Q. Okay. Turn to tab 17 -- or sorry, tab 3. 6 It's the document Bates numbered JNJAZ55_213. 7 And, again, I think it mentions tremolite 8 and actinolite as things that may be in the ore, but it 9 doesn't talk about whether or not anything's asbestosiform 10 or any levels, correct? 11 A. True. It does say tremolite and 12 actinolite. 13 Q. Turn to tab 4. Somebody's conveniently 14 put an arrow, I think, to the paragraph that you're 15 relying on. It states -- sorry, this is the document 16 that starts JNJAZ -- 17 MS. O'DELL: Just to make clear -- 18 MR. FROST: It's on the document. 19 MS. O'DELL: It's the original. 20 MR. FROST: Yeah. I was going to say, 21 it's not something we've done. 22 MS. SCOTT: Or anyone else? 23 MR. FROST: Yes. It's part of the 24 original document as produced.</p>	<p>1 BY MR. FROST: 2 Q. But there can be different mineral 3 profiles throughout the valley depending on when it 4 formed, what it formed from? 5 A. Yes, and it could be present because of 6 the association observed. 7 Q. Unfortunately, there's just no way to 8 tell from this document, correct? 9 MS. SCOTT: Objection. 10 MS. O'DELL: Object to form. 11 A. Correct. 12 BY MR. FROST: 13 Q. All right. Turn to tab 5. It's the 14 document that starts JNJAZ_87. This is the Pooley 15 report from 1972. It's very long, so I'll help you out. 16 If you turn to the very end of it -- 17 MS. O'DELL: Doctor, feel free to -- 18 BY MR. FROST: 19 Q. Yeah. I was going to say, you can review 20 the whole thing if you want, but I'm going to 21 concentrate on the "Conclusions" section. 22 If you look at -- it's on page 121 of the 23 report. 24 A. Oh, this one. 25 Q. Do you recognize that you've seen this</p>

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<p>1 one?</p> <p>2 A. Yeah.</p> <p>3 Q. The quality's bad.</p> <p>4 A. Oh, there's -- you can see chrysotile.</p> <p>5 "Examples of commercial amphibole and chrysotile</p> <p>6 asbestos particles together with typical selected area</p> <p>7 electron diffraction patterns." Yeah. So the images</p> <p>8 are here, but, yeah. So, yeah. That's right. That</p> <p>9 page you can't tell.</p> <p>10 MS. O'DELL: What page are you on?</p> <p>11 THE WITNESS: I'm on Page 56. I'm sorry.</p> <p>12 MS. O'DELL: Yeah. No, no. I'm just</p> <p>13 trying to follow along. You go where you need</p> <p>14 to go.</p> <p>15 A. Amosite asbestos particles there.</p> <p>16 BY MR. FROST:</p> <p>17 Q. Again, the chrysotile you pointed out on</p> <p>18 56, he's showing you an example of what a commercial</p> <p>19 chrysotile looks like, right, not a picture of what came</p> <p>20 from the talc. Do you agree?</p> <p>21 MS. O'DELL: Object to the form.</p> <p>22 A. What's your question?</p> <p>23 BY MR. FROST:</p> <p>24 Q. When you just talked about 56, the</p> <p>25 picture of chrysotile you're talking about is a</p>	<p>1 formed from the amphibole mineral found at the mine were</p> <p>2 hardly fibrous in character, the majority of the</p> <p>3 tremolite breaking to give compact particles," correct?</p> <p>4 A. It also said, "Those fibres formed were</p> <p>5 short and had a very large diameter." So fibers were</p> <p>6 formed. But, yeah, you're correct.</p> <p>7 Q. So, again, it's his opinion that there</p> <p>8 was no asbestos in that test, correct?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 MS. SCOTT: Objection.</p> <p>11 BY MR. FROST:</p> <p>12 Q. But that the tremolite was not</p> <p>13 asbestosiform. I think they were just called the</p> <p>14 amphibole, but the amphibole that he found was not</p> <p>15 asbestos, correct?</p> <p>16 A. Correct.</p> <p>17 Q. Turning back to your report, page 10, the</p> <p>18 "Mines in Vermont." So I think we talked about it a</p> <p>19 little bit, but I think you and I will agree the</p> <p>20 Appalachian ultramafic belt is where the talc is found</p> <p>21 in Vermont, correct? I think it's your second sentence.</p> <p>22 A. Yes. Yeah.</p> <p>23 Q. Now, do you have the opinion that all the</p> <p>24 ultramafic rocks within the Appalachian belt had the</p> <p>25 same general metamorphic histories and formation</p>
<p>1 reference to --</p> <p>2 A. I just recognized it.</p> <p>3 Q. Okay.</p> <p>4 MS. O'DELL: Object to the form.</p> <p>5 BY MR. FROST:</p> <p>6 Q. So if you look at the fourth paragraph</p> <p>7 down on page 121, Pooley's page 121, it's page 210 of</p> <p>8 the Bates number. The conclusion is "The only</p> <p>9 asbestos-type mineral to be detected in the hand samples</p> <p>10 was tremolite, which was found in three specimens." If</p> <p>11 you go down to the next sentence, it says, "no tremolite</p> <p>12 was detected in the talc-type specimens." Is that</p> <p>13 right?</p> <p>14 MS. O'DELL: Object to the form.</p> <p>15 A. That's what it says, yes.</p> <p>16 BY MR. FROST:</p> <p>17 Q. Okay. So, again, Pooley did not find any</p> <p>18 tremolite in the actual ore or the talc, correct?</p> <p>19 MS. O'DELL: Object to the form.</p> <p>20 MS. SCOTT: Objection.</p> <p>21 A. As it reads, yes.</p> <p>22 BY MR. FROST:</p> <p>23 Q. And if you go to the next page, page 122,</p> <p>24 it's the first full paragraph, the second paragraph on</p> <p>25 the page. About halfway down, it reads, "Particles</p>	<p>1 histories and profiles?</p> <p>2 A. No. There would be some variability.</p> <p>3 Q. Okay. I agree with you. So have you</p> <p>4 ever looked at the local geology for the formation</p> <p>5 associated with the Hammondsburg mine?</p> <p>6 A. I've never been on site. I've never been</p> <p>7 to the mine.</p> <p>8 Q. Have you ever looked at any geological</p> <p>9 survey specific to the Hammondsburg mine deposit?</p> <p>10 A. The Hammondsburg?</p> <p>11 Q. Yes.</p> <p>12 A. Yeah. Yeah. I see its geological</p> <p>13 survey.</p> <p>14 Q. I see the one you've typed here. That's</p> <p>15 really just geological survey showing you where it is,</p> <p>16 correct? That doesn't tell you about the morphology and</p> <p>17 the geological deposit formation?</p> <p>18 A. I think there's some geologic data that's</p> <p>19 associated with it. I don't remember specifics.</p> <p>20 Q. Okay. So and this is true for -- it's</p> <p>21 27, 28, 29 and 30, your footnotes, correct? These are</p> <p>22 all, you know, USGS website hits for Hamm, et cetera?</p> <p>23 A. Yeah.</p> <p>24 Q. Have you ever looked at any of the USGS</p> <p>25 actual reports or surveys that were done examining the</p>

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<p>1 talc in these particular mines?</p> <p>2 A. I believe I have.</p> <p>3 Q. Do you recall which ones they are?</p> <p>4 A. Not specifically at the moment.</p> <p>5 MS. SCOTT: Before you get into this</p> <p>6 next --</p> <p>7 MR. FROST: Do you want to take a break?</p> <p>8 MS. SCOTT: Yeah, let's do that. We've</p> <p>9 been going about an hour and a half, I think, is</p> <p>10 that right, or about an hour?</p> <p>11 MS. O'DELL: Hour and 13 minutes.</p> <p>12 VIDEOGRAPHER: We're now going off the</p> <p>13 record. The time is 2:39.</p> <p>14 (A recess was taken from 2:39 to 2:58)</p> <p>15 VIDEOGRAPHER: We're now back on record,</p> <p>16 and the time is 2:58.</p> <p>17 (Exhibit 15 was marked for</p> <p>18 identification.)</p> <p>19 BY MR. FROST:</p> <p>20 Q. All right. I'm going to start -- can you</p> <p>21 grab, I think, number 15? It's the 1951 geological</p> <p>22 survey from Chidester. Have you ever seen this article</p> <p>23 before?</p> <p>24 A. I don't remember. Let me look at my</p> <p>25 references, the author or the agency. It doesn't appear</p>	<p>1 geological survey?</p> <p>2 A. As stated, yeah.</p> <p>3 Q. Any reason this would not have come up in</p> <p>4 your search?</p> <p>5 MS. SCOTT: Objection.</p> <p>6 A. I didn't search for this particular</p> <p>7 document. When I was doing my search for the</p> <p>8 peer-review literature, you know, I use, like, Web of</p> <p>9 Science. So Web of Science has, essentially, this</p> <p>10 higher level of peer-review material. So this isn't</p> <p>11 necessarily -- these types of reports aren't included in</p> <p>12 that, but I did use Google to search things, and that's</p> <p>13 how I found some of the other things. So -- but, no, I</p> <p>14 don't believe that I've seen this report.</p> <p>15 BY MR. FROST:</p> <p>16 Q. Okay. Given your rendering opinions</p> <p>17 about the geology specifically at the Vermont talc</p> <p>18 deposits, any particular reason you didn't search the</p> <p>19 geological surveys, the USGS surveys regarding the</p> <p>20 areas?</p> <p>21 MS. SCOTT: Objection.</p> <p>22 A. I looked at the literature that I thought</p> <p>23 was relevant, based on my professional opinion.</p> <p>24 BY MR. FROST:</p> <p>25 Q. The next one marked. Take a look at --</p>
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<p>1 to be on my reference list.</p> <p>2 Q. Okay. Turn to page 28 of the report.</p> <p>3 MS. SCOTT: And, Doctor, feel free to</p> <p>4 take a look at the entirety of the report if you</p> <p>5 need to.</p> <p>6 A. Okay. I'm not sure.</p> <p>7 MS. SCOTT: Do you have one?</p> <p>8 MR. FROST: Do you need a copy?</p> <p>9 MS. SCOTT: Yes.</p> <p>10 MR. FROST: I apologize.</p> <p>11 MS. SCOTT: That's okay. Thanks.</p> <p>12 MR. FROST: You're welcome. Sorry about</p> <p>13 that.</p> <p>14 MS. SCOTT: No problem.</p> <p>15 BY MR. FROST:</p> <p>16 Q. And my question about this paper is: You</p> <p>17 agree with me, turning to page 28, that this geological</p> <p>18 survey specifically talks about the Hammondsburg talc</p> <p>19 mine, correct?</p> <p>20 A. Turn to page 28. Let's see here.</p> <p>21 Q. About halfway down the first column,</p> <p>22 "Hammondsburg talc quarry, Locality 117."</p> <p>23 A. 28, Locality 117. Okay. I see that.</p> <p>24 Q. So you agree with me this paper talks</p> <p>25 about the Hammondsburg talc mine, correct, this</p>	<p>1 yep, the next one.</p> <p>2 MS. O'DELL: What's the exhibit number on</p> <p>3 this one?</p> <p>4 MR. FROST: Sixteen.</p> <p>5 (Exhibit 16 was marked for</p> <p>6 identification.)</p> <p>7 BY MR. FROST:</p> <p>8 Q. And, again, this is Chidester 1964.</p> <p>9 A. It's the geological survey. Let me check</p> <p>10 and see if I have that. It doesn't look like I have</p> <p>11 that in the reference list.</p> <p>12 Q. Turn to pages --</p> <p>13 A. So let me look. Can I look at the report</p> <p>14 and --</p> <p>15 Q. Yes.</p> <p>16 A. -- just see what the nature is?</p> <p>17 Q. Sure. And, specifically, I'm going to</p> <p>18 turn your attention to 48 and 49.</p> <p>19 A. 48 and 49, okay. Let me look at the</p> <p>20 report in general here.</p> <p>21 Q. The question, then, is going to be: You</p> <p>22 agree with me that in this USGS survey, they</p> <p>23 specifically ran chemical analysis of ore coming out of</p> <p>24 the Hammondsburg mine? I guess it's typed ore mill</p> <p>25 product.</p>

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<p>1 A. Yes. It says, "Chemical analyses of a 2 variety of talc in Vermont," and the year on this is -- 3 well, I'm sorry.</p> <p>4 Q. I believe it's 19 --</p> <p>5 A. So 40a, 40b and 40c. The source is from 6 Spence, so let's see what Spence 1940 is. So at that 7 period of time, most things were done by wet chemistry, 8 and so the -- there were limitations as far as the 9 detection limits. So I'm sorry. 1940.</p> <p>10 Q. Well, again, my question --</p> <p>11 A. Yeah. Go ahead with your question.</p> <p>12 Q. Despite the fact that there is specific 13 testing of ore in this document as well as Spence, 14 neither of those two documents ever came up in your 15 searches, correct?</p> <p>16 MS. SCOTT: Objection.</p> <p>17 BY MR. FROST:</p> <p>18 Q. And this is testing specific to the ore 19 from the Hammondsburg mine. Do you agree with me that 20 neither Spence nor this paper came up in your searches?</p> <p>21 A. Correct. I mean, you know, so one of the 22 things is that it depends --</p> <p>23 Q. Well, answer my question.</p> <p>24 A. Yep. I'm seeing if it -- it's not -- 25 actually, Spence is not cited in this document.</p>	<p>1 MS. O'DELL: Let him finish.</p> <p>2 A. Power diffraction was beginning to be 3 common and then chemical analyses. So I didn't 4 necessarily exclude it based on -- or I didn't really -- 5 I just -- I didn't find it, but I didn't -- you know, 6 these are older references and I would not --</p> <p>7 BY MR. FROST:</p> <p>8 Q. That was question is you didn't find 9 this, right?</p> <p>10 MS. SCOTT: Objection.</p> <p>11 A. I did not search for a lot of the older 12 literature because the analytical methods dated, 13 predated what appear to be the operational -- operation 14 timelines or --</p> <p>15 BY MR. FROST:</p> <p>16 Q. But it doesn't sound like you searched 17 for any USGS surveys regarding these specific mines; is 18 that fair? That wouldn't have come up in your search?</p> <p>19 MS. SCOTT: Objection.</p> <p>20 A. So specific mines may not -- they're not 21 necessarily in USGS reports. Mines tend to show up in 22 USGS reports if there's permission or --</p> <p>23 BY MR. FROST:</p> <p>24 Q. Sir, I have a limited amount of time, and 25 I really need you to just answer my questions. So my</p>
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<p>1 Q. It appears to be. Spence?</p> <p>2 A. Pearre, Pearre, Pearre, Perry, 3 Pratt, Quinn.</p> <p>4 Q. If you at page 61, Spence, HS 1940.</p> <p>5 A. It's not listed in the --</p> <p>6 Q. Page 61, selected bibliography?</p> <p>7 A. 61. I'm sorry. I don't see it. Oh, 8 Spence. I was thinking Pence. Okay. Right. Very 9 good.</p> <p>10 Q. Okay.</p> <p>11 A. So, essentially, the -- I don't think the 12 company was mining Hammondsburg at that time, was it?</p> <p>13 Q. My question becomes, did these come up -- 14 despite the fact that there's testing specifically of 15 ore from Hammondsburg in both Spence and this, this 16 report did not come up or the Spence report come up in 17 your searches; is that correct?</p> <p>18 MS. SCOTT: Objection.</p> <p>19 A. Correct, because the analytical 20 techniques at the time, certainly for electron 21 microscopy, was in its infancy. Power diffraction 22 was --</p> <p>23 BY MR. FROST:</p> <p>24 Q. So you're saying it didn't come up in 25 your computer search because of --</p>	<p>1 question is --</p> <p>2 A. I'm trying to give a thorough answer.</p> <p>3 Q. No, no. The question is -- it's a very 4 simple question. Did you search USGS reports for the 5 specific mines that Johnson & Johnson used in Vermont?</p> <p>6 MS. SCOTT: Objection.</p> <p>7 A. I don't remember.</p> <p>8 BY MR. FROST:</p> <p>9 Q. Okay. And you certainly didn't cite them.</p> <p>10 A. I did not cite these. I did not cite these.</p> <p>11 Q. Do you know what NIOSH is?</p> <p>12 A. Yes.</p> <p>13 Q. Okay. Are you aware that NIOSH has 14 funded an epidemiological study based out of the workers 15 of the Vermont mines?</p> <p>16 MS. SCOTT: Objection.</p> <p>17 A. I'm not a medical expert. I only know 18 NIOSH really exists. I use it for the basic definition.</p> <p>19 BY MR. FROST:</p> <p>20 Q. So is that a no?</p> <p>21 A. I'm sorry. Repeat the question, please.</p> <p>22 Q. I said, are you aware that NIOSH has run 23 an epidemiological study of the workers at the Vermont</p>

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<p>1 mines?</p> <p>2 A. No I am not. I don't remember.</p> <p>3 MR. FROST: We'll mark this as -- I</p> <p>4 believe this is new 17.</p> <p>5 (Exhibit 17 was marked for</p> <p>6 identification.)</p> <p>7 BY MR. FROST:</p> <p>8 Q. Have you ever seen this paper? Do you</p> <p>9 know who Dr. Boundy is?</p> <p>10 A. So what is the journal? I don't have it</p> <p>11 cited as Boundy. The journal -- is this a National</p> <p>12 Institutes of Health paper, just so I can be sure?</p> <p>13 Q. I believe it is a journal called Dust and</p> <p>14 Disease.</p> <p>15 A. Oh, I don't think I cited anything from</p> <p>16 Dust and Disease.</p> <p>17 Q. Okay.</p> <p>18 A. So in occupational exposures,</p> <p>19 non-asbestiform talc in Vermont. Okay?</p> <p>20 Q. Is this not something that came up in</p> <p>21 your search?</p> <p>22 MS. SCOTT: Objection.</p> <p>23 A. No. I'm not -- I'm sorry. Dust and</p> <p>24 Disease?</p> <p>25</p>	<p>1 explanations about other parts of the report that don't</p> <p>2 have to do with question are just taking up my time on</p> <p>3 the record. So I'm not trying to be rude, but I'm</p> <p>4 running out of time, so I'm trying to move it along.</p> <p>5 MS. SCOTT: But to be fair, you're also</p> <p>6 asking him about an epidemiological study. He's</p> <p>7 not an epidemiologist.</p> <p>8 BY MR. FROST:</p> <p>9 Q. And my question was whether or not this</p> <p>10 was something he would have searched for, and the answer</p> <p>11 is no, right?</p> <p>12 A. No. I would not go to a journal called</p> <p>13 Dust and Disease. Are you okay on time?</p> <p>14 Q. You don't need to worry about that.</p> <p>15 That's a lawyer thing.</p> <p>16 MS. O'DELL: Yes.</p> <p>17 BY MR. FROST:</p> <p>18 Q. Turning back to your report, looking at</p> <p>19 the bottom of page 10, we then move on to the mines in</p> <p>20 China.</p> <p>21 A. I requested documents on -- I requested</p> <p>22 documents on China, mines in China. There were --</p> <p>23 apparently, there was not a whole lot of information. I</p> <p>24 know Dr. Longo tested materials from China, but I don't</p> <p>25 think -- I mean, I made a request for cores. I made</p>
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<p>1 BY MR. FROST:</p> <p>2 Q. That's correct.</p> <p>3 A. Yeah. I'm not a medical --</p> <p>4 Q. So you wouldn't have --</p> <p>5 A. -- expert.</p> <p>6 Q. Sorry.</p> <p>7 A. So I'm not a medical expert, so I didn't.</p> <p>8 Q. So you wouldn't have looked at any</p> <p>9 journals outside of your specific field, because I will</p> <p>10 relate to you that they tested talc from the various</p> <p>11 mines and found that there was no asbestos in it based</p> <p>12 on the NIOSH study. It's not something you relied on?</p> <p>13 A. So there's --</p> <p>14 MS. O'DELL: Object to the form. Excuse</p> <p>15 me, Doctor. Object to the form. You may</p> <p>16 answer.</p> <p>17 A. In all these questions are still -- I did</p> <p>18 not look at this paper, but this paper does not negate</p> <p>19 the findings of the rest of the report. I've tried to</p> <p>20 take a broad net.</p> <p>21 BY MR. FROST:</p> <p>22 Q. Sir, again --</p> <p>23 A. I have a broad net.</p> <p>24 Q. I'm asking very simply yes or no</p> <p>25 questions about whether he searched for things,</p>	<p>1 requests for testing results, including TEM, XRD, bulk</p> <p>2 chemistry. But the data that I was able to have was, as</p> <p>3 far as I did actually, I tried to search on Web of</p> <p>4 Science and other things about talc deposits in China,</p> <p>5 and I could not discernibly find anything. I think</p> <p>6 there's Chinese references, but I don't speak Chinese</p> <p>7 and --</p> <p>8 Q. Sure.</p> <p>9 A. -- I couldn't really translate those.</p> <p>10 Q. And by saying you asked, you asked</p> <p>11 plaintiffs' counsel, and they provided you what they</p> <p>12 provided you, correct?</p> <p>13 MS. SCOTT: Objection.</p> <p>14 A. Yeah. So I want to use company</p> <p>15 documents, so give the company, essentially, as I</p> <p>16 believe I was supposed to do, so the company documents</p> <p>17 are -- I mean.</p> <p>18 BY MR. FROST:</p> <p>19 Q. Okay. And like we established before,</p> <p>20 you have no way of knowing if there are any other</p> <p>21 documents that just weren't given to you by plaintiffs'</p> <p>22 counsel, right?</p> <p>23 MS. SCOTT: Objection.</p> <p>24 A. Well, I did. I did search -- I did</p> <p>25 search the Internet to try to find --</p>

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<p>1 BY MR. FROST:</p> <p>2 Q. I'm talking about documents.</p> <p>3 A. The documents?</p> <p>4 Q. Yes. You have no way of knowing if what</p> <p>5 plaintiffs gave you is the complete set of documents</p> <p>6 that relate to the mine, right?</p> <p>7 A. I expected --</p> <p>8 MS. SCOTT: Objection.</p> <p>9 A. Yeah. Of all the documents that exist, I</p> <p>10 expect that it's not each and every single document.</p> <p>11 BY MR. FROST:</p> <p>12 Q. So you've made your review and your</p> <p>13 opinions on the China based on what is admittedly an</p> <p>14 incomplete set of documents provided to you by</p> <p>15 plaintiffs' counsel, right?</p> <p>16 MS. SCOTT: Object to the form.</p> <p>17 A. I don't know if it's fully -- I made</p> <p>18 requests for the China for as much -- all the</p> <p>19 information on China that there was and, to my</p> <p>20 knowledge, what was provided, and then what I looked at,</p> <p>21 I tried to search things on my own. There just is</p> <p>22 apparently not a lot I would consider. I would</p> <p>23 certainly consider reviewing documents on China. I</p> <p>24 would certainly consider translated documents, so</p> <p>25 someone who's got an expertise but --</p>	<p>1 metal contents like lead, cobalt, chromium, iron, nickel</p> <p>2 and titanium, correct?</p> <p>3 A. Correct.</p> <p>4 Q. And then you cite to JNJ 59273, right?</p> <p>5 A. Right.</p> <p>6 Q. Okay. Let's look at that document.</p> <p>7 A. It's got 750 parts per million of</p> <p>8 titanium in it. It's actually low. It's like .2.</p> <p>9 (Exhibit 18 was marked for</p> <p>10 identification.)</p> <p>11 BY MR. FROST:</p> <p>12 Q. I'll divert your attention to page 2086.</p> <p>13 I take it the comment at the bottom of 2086 is where</p> <p>14 you're getting this information from, right?</p> <p>15 MS. SCOTT: Objection.</p> <p>16 A. I looked at the data. Actually, I'm</p> <p>17 looking for the data table that I saw the other day.</p> <p>18 Yeah, so 2078, titanium 750. The lead there is 12.7 on</p> <p>19 the previous table. Let's look and see what the</p> <p>20 concentrations are.</p> <p>21 BY MR. FROST:</p> <p>22 Q. You're on 2078?</p> <p>23 A. I am on 2078.</p> <p>24 Q. Okay.</p> <p>25 A. And so --</p>
<p>1 BY MR. FROST:</p> <p>2 Q. Again, I'm trying to rein in your answers</p> <p>3 here --</p> <p>4 A. Okay.</p> <p>5 Q. -- to what we're talking about. But I</p> <p>6 want to be clear. The requests you made weren't to</p> <p>7 either Imerys or Johnson & Johnson. You made those</p> <p>8 requests to plaintiffs' counsel?</p> <p>9 A. Yes.</p> <p>10 Q. And then plaintiffs' counsel provided</p> <p>11 back to you a set of documents?</p> <p>12 A. Yes.</p> <p>13 Q. And you can't tell me whether or not that</p> <p>14 set consists of all documents that you requested related</p> <p>15 to the Chinese mines, right?</p> <p>16 MS. SCOTT: Objection.</p> <p>17 A. I cannot without certainty.</p> <p>18 BY MR. FROST:</p> <p>19 Q. All right. So let's look at what you</p> <p>20 opine. Page 11, the second paragraph, you state, as far</p> <p>21 back as 1983, and again, we know in 1983, Johnson &</p> <p>22 Johnson was not sourcing talc from China, right?</p> <p>23 A. Correct.</p> <p>24 Q. Defendants had information indicating</p> <p>25 that Chinese talc contains higher than normal heavy</p>	<p>1 Q. Do you see the top of 2078 that that</p> <p>2 chart relates to something called "Kwangsi No. 1 talc"?</p> <p>3 A. Yes.</p> <p>4 Q. Do you believe that Kwangsi No. 1 talc</p> <p>5 was the talc ever used by Johnson & Johnson?</p> <p>6 A. It's unclear. I don't.</p> <p>7 Q. Well, in your report, I think you note</p> <p>8 that they use Kwangsi No. 1 and Kwangsi No. 2, correct?</p> <p>9 A. Correct.</p> <p>10 MS. O'DELL: Objection.</p> <p>11 A. I think -- again, I'm not an expert in</p> <p>12 Chinese language.</p> <p>13 BY MR. FROST:</p> <p>14 Q. But you'd agree with me that Kwangsi No.</p> <p>15 1 is not Kwangsi talc, correct? It's a different ore?</p> <p>16 A. I don't really know. Names of mines</p> <p>17 change and things, but, potentially, they seem</p> <p>18 different. That's reasonable. But in my sentence, I</p> <p>19 say defense information indicating that Chinese talc</p> <p>20 contains higher than normal levels and, you know, the</p> <p>21 metals are there. So I think that statement is</p> <p>22 consistent with the chart on page 2078 and 2086, and</p> <p>23 let's look at -- it's been a while since I looked at the</p> <p>24 document.</p> <p>25 Q. Hold on. Let me walk you through it.</p>

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<p>1 A. I'd like to review --</p> <p>2 Q. Well, I want to talk about your</p> <p>3 statement, then. When you're saying Chinese talc is</p> <p>4 higher than normal --</p> <p>5 A. Can I?</p> <p>6 Q. No.</p> <p>7 MS. SCOTT: Let him ask the question.</p> <p>8 BY MR. FROST:</p> <p>9 Q. Can you answer my question, please?</p> <p>10 A. Okay. Good.</p> <p>11 Q. When you say Chinese talc contains higher</p> <p>12 than normal heavy metal contents, you're talking about</p> <p>13 all talc from China, not necessarily the Chinese talc</p> <p>14 that Johnson & Johnson was using? Is that what you're</p> <p>15 telling me?</p> <p>16 MS. SCOTT: Objection.</p> <p>17 A. I'm sorry.</p> <p>18 BY MR. FROST:</p> <p>19 Q. I'll ask you the question again, so you</p> <p>20 don't have to read it.</p> <p>21 A. Yeah.</p> <p>22 Q. So in your report, when you're talking</p> <p>23 about Chinese talc, you're talking about talc from the</p> <p>24 country of China, not the Chinese talc ore that Johnson</p> <p>25 & Johnson was using? Is that what you're telling us?</p>	<p>1 refer to this as an indication that there are</p> <p>2 problematic materials in Chinese ore. Obviously, it was</p> <p>3 investigated for a reason, so they were interested in it</p> <p>4 at some level.</p> <p>5 BY MR. FROST:</p> <p>6 Q. Okay. But you agree with me you have no</p> <p>7 way to tell us one way or the other that any of the</p> <p>8 tests of any of the ore in this document actually relate</p> <p>9 to the talcum powder that 20 years, 30 years later made</p> <p>10 it into Johnson & Johnson talcum powder products?</p> <p>11 MS. O'DELL: Objection.</p> <p>12 A. The -- the documentation provided to me</p> <p>13 is -- there's many gaps.</p> <p>14 BY MR. FROST:</p> <p>15 Q. Sir, I'm talking about this document.</p> <p>16 Focus on this document. So my question is: This</p> <p>17 document, is there anywhere in this document that says</p> <p>18 the talc that Johnson & Johnson uses 20 years later for</p> <p>19 talcum powder has constituents? I understand we're</p> <p>20 talking --</p> <p>21 A. Has constituents?</p> <p>22 Q. Has the constituents we're talking about</p> <p>23 here. You know, that "Defendant had information</p> <p>24 indicating that Chinese talc contains higher than normal</p> <p>25 heavy metal contents like lead, cobalt, chromium, nickel</p>
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<p>1 MS. SCOTT: Objection.</p> <p>2 A. I meant, essentially, both more Chinese,</p> <p>3 Chinese talc, meaning talc within the boundaries of</p> <p>4 China has more or has contaminants and would be of</p> <p>5 potential concern.</p> <p>6 BY MR. FROST:</p> <p>7 Q. That's a general statement as to all</p> <p>8 talcs coming out of all talc regions of China?</p> <p>9 MS. O'DELL: Object to the form.</p> <p>10 BY MR. FROST:</p> <p>11 A. Well, it's specific to this example, and</p> <p>12 as an example, I think there's, there's a lot of concern</p> <p>13 in the general environmental literature about materials</p> <p>14 in China in general so --</p> <p>15 Q. And by concerns over materials in</p> <p>16 general, you're talking about now everything coming out</p> <p>17 of China as a generalization?</p> <p>18 MS. SCOTT: Objection.</p> <p>19 A. Not everything.</p> <p>20 BY MR. FROST:</p> <p>21 Q. But you're talking about, like, the lead</p> <p>22 concerns out of manufactured products like toys, and</p> <p>23 we're including this now in your statement, right?</p> <p>24 MS. SCOTT: Objection.</p> <p>25 A. No. I'm sorry. Let me just be clear. I</p>	<p>1 and titanium." Is there anything in here --</p> <p>2 A. They simply knew that this is how I --</p> <p>3 they simply know that this report existed, right?</p> <p>4 Q. You have to listen to my question. You</p> <p>5 can't tell me one way or the other that this report in</p> <p>6 any way relates to any talc ever used by Johnson &</p> <p>7 Johnson for its talcum powder, right?</p> <p>8 MS. SCOTT: Objection.</p> <p>9 A. I do not have a chain of custody, so,</p> <p>10 yes.</p> <p>11 Q. Okay.</p> <p>12 A. But the way the sentence is phrased, the</p> <p>13 sentence is general.</p> <p>14 Q. Yes. We've established that now.</p> <p>15 MS. O'DELL: Excuse me.</p> <p>16 BY MR. FROST:</p> <p>17 Q. No, no. I'm saying --</p> <p>18 MS. O'DELL: You interrupted him -- let</p> <p>19 him finish.</p> <p>20 MR. FROST: Sure.</p> <p>21 BY MR. FROST:</p> <p>22 Q. In general --</p> <p>23 MS. O'DELL: Stop talking. Let him talk.</p> <p>24 Thank you.</p> <p>25 A. So the sentence is general. Defendants</p>

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<p>1 have information indicating that Chinese talc contains 2 higher than normal levels of lead, cobalt, chromium. So 3 I feel that this document supports that statement. It 4 doesn't say all talc, but they had knowledge that 5 some --</p> <p>6 BY MR. FROST:</p> <p>7 Q. Some talc?</p> <p>8 A. -- talc had issues.</p> <p>9 Q. Okay.</p> <p>10 THE WITNESS: My thing is -- I think it 11 stopped. What time? It says 1520.</p> <p>12 MS. SCOTT: Did you hit "follow"?</p> <p>13 THE WITNESS: Yeah, I have hit "follow" 14 several times.</p> <p>15 BY MR. FROST:</p> <p>16 Q. All right. While they're sorting that 17 out, I'll continue to ask my questions.</p> <p>18 A. Okay.</p> <p>19 Q. All right. Page 11 of your report, 20 second full paragraph starts, "In the Guangxi Province."</p> <p>21 A. Yes.</p> <p>22 Q. If you look down the citation, you say, 23 after it, it says, "In 'Talc Geology, Resources, 24 Production and Market Study, Guangxi Autonomous Region,' 25 asbestos was discovered in fractures of the talc ore</p>	<p>1 deposits are geologically related, to the best of my 2 ability. Again, there is some paucity of data, but it 3 seemed, from what I could gather, that these are 4 geologically related.</p> <p>5 BY MR. FROST:</p> <p>6 Q. So sitting here today, you can tell me 7 that you've specifically looked at the Maanshan deposit 8 and the -- I apologize to the court reporter for these 9 names -- and Zhizhua Mine, and you're confident and you 10 can tell me that you have seen sources that shows those 11 two exact deposits are similar and come from the same 12 areas? And if that's true, what's your source?</p> <p>13 A. Let me -- so...</p> <p>14 MS. O'DELL: Objection.</p> <p>15 A. So asbestos was discovered and fractures 16 of the talc ore body of the Maanshan deposit looking in 17 the Shanglin region. And the question is am I certain 18 that talc --</p> <p>19 BY MR. FROST:</p> <p>20 Q. You just told me that you've seen 21 something that says Maanshan is the same geological 22 formation?</p> <p>23 A. Can we look at 413792?</p> <p>24 Q. I don't have it. Is that the one we just 25 looked at, though?</p>
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<p>1 body of the Maanshan talc deposit located in the 2 Shanglin region."</p> <p>3 Did I read that right, or close enough, 4 anyway, on the pronunciations?</p> <p>5 A. Yes.</p> <p>6 Q. Did Johnson & Johnson ever use talc from 7 the Maanshan deposit?</p> <p>8 A. I'm not sure. I'm confused by that, the 9 Chinese words, so I'm not sure. But, again, there 10 was -- so I don't know for sure, but there was a paucity 11 of data relating to Chinese, I think.</p> <p>12 Q. You specifically state, if you look back 13 at page 8 --</p> <p>14 A. I forgot.</p> <p>15 Q. -- of your report, you state, "2002 to 16 present: Zhizhua Mine, Guigang Province, China. 17 Product Name: Guangxi No. 2 and Guangxi No. 2A"</p> <p>18 A. Yeah. Those are two.</p> <p>19 Q. Maanshan is not the Guangxi mine that's 20 mentioned there, correct?</p> <p>21 A. Correct.</p> <p>22 Q. And you have no evidence that Johnson & 23 Johnson ever sourced talc from the Maanshan deposit?</p> <p>24 MS. SCOTT: Objection.</p> <p>25 A. Correct. But as I understand it, the</p>	<p>1 MS. SCOTT: No.</p> <p>2 MR. FROST: A different one. I don't 3 have it, so, no. I mean, you guys can do it 4 during your time.</p> <p>5 MS. O'DELL: If he wants to see the 6 document and it's available to him --</p> <p>7 All right. If he has it.</p> <p>8 A. Can we? So it's Imerys 413792, Imerys.</p> <p>9 VIDEOGRAPHER: Watch your mic. Doctor, 10 watch your mic.</p> <p>11 A. That's 413792. 413792. It is a JNJ.</p> <p>12 BY MR. FROST:</p> <p>13 Q. No. It is an Imerys.</p> <p>14 VIDEOGRAPHER: Do you want to go off the 15 record?</p> <p>16 MR. FROST: Let's go off the record, 17 please.</p> <p>18 VIDEOGRAPHER: We're now going off 19 record. The time is 3:32.</p> <p>20 (Recess taken from 3:32 to 3:39.)</p> <p>21 VIDEOGRAPHER: We're now back on record. 22 The time is 3:39.</p> <p>23 BY MR. FROST:</p> <p>24 Q. Okay. So do you believe this document 25 supports that the geology of Zhizhua and Maanshan are</p>

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<p>1 the same?</p> <p>2 A. So Guangxi is an autonomous region.</p> <p>3 Q. Okay.</p> <p>4 A. And there are different mines within that</p> <p>5 autonomous region.</p> <p>6 Q. So, again, do you have anything that</p> <p>7 shows me that the formation at the Zhizhua Mine are the</p> <p>8 same as the Maanshan mine?</p> <p>9 A. No. I don't think so, or I'm unclear.</p> <p>10 I'm confused by the names.</p> <p>11 Q. All right. That's fine. Moving on on</p> <p>12 page 11, the paragraph that starts about halfway down</p> <p>13 the page, "Beginning in July of 2004."</p> <p>14 A. Uh-huh.</p> <p>15 Q. And then the next two paragraphs sort of</p> <p>16 preceding that, do you agree with me that these all</p> <p>17 relate to a mine visit in the Liboshikuang Mine of the</p> <p>18 Shandong Province?</p> <p>19 A. I'm confused by the names. I would need</p> <p>20 to look at the document.</p> <p>21 Q. Yeah. And Hubei and Shandong. Well,</p> <p>22 here. We'll start with the first paragraph. "Beginning</p> <p>23 in ... 2004, Rio Tinto began investigating talc</p> <p>24 operations and talc potential in the provinces of Hubei</p> <p>25 and Shandong." Did I read that correctly?</p>	<p>1 anything to refute that statement?</p> <p>2 MS. SCOTT: Objection.</p> <p>3 A. I have nothing to refute or endorse. I</p> <p>4 do know the geology of China is very chopped up. It's</p> <p>5 extremely complex. So you can have areas that are</p> <p>6 geologically connected that are distant from each other.</p> <p>7 So Tianshan is a basin area in north central China. I</p> <p>8 have colleagues that work there, and essentially, there</p> <p>9 are major displacements that occur.</p> <p>10 So, again, I didn't have details of</p> <p>11 China, but, essentially, China is very complex, and you</p> <p>12 can have parts of the geology disperse. Yes, I was not</p> <p>13 aware that they were separated by geographic distance.</p> <p>14 That doesn't preclude that.</p> <p>15 BY MR. FROST:</p> <p>16 Q. Well, I was going to say without</p> <p>17 speculating, your can't tell me whether or not the talc</p> <p>18 districts of Hubei and Shandong are the same as the talc</p> <p>19 district in Guangxi, for example, correct?</p> <p>20 MS. SCOTT: Objection.</p> <p>21 BY MR. FROST:</p> <p>22 Q. Sitting here today --</p> <p>23 A. Correct. But the statement as "Rio Tinto</p> <p>24 began investigating talc operations and talc potential</p> <p>25 in the provinces of Hubei and Shandong."</p>
<p>1 A. Yeah. So, to my knowledge, that</p> <p>2 paragraph is correct.</p> <p>3 Q. But I didn't ask if it was correct.</p> <p>4 A. Okay.</p> <p>5 Q. My question is: Do you agree with me</p> <p>6 that Hubei and Shandong are different areas of China</p> <p>7 than Guangxi?</p> <p>8 MS. SCOTT: Objection.</p> <p>9 A. I don't know.</p> <p>10 BY MR. FROST:</p> <p>11 Q. Okay. Did you ever look up Hubei and</p> <p>12 Shandong and compare them to where Guangxi sits?</p> <p>13 A. I don't remember. If I did, I -- you</p> <p>14 know, I got -- the nomenclature, the names were</p> <p>15 confusing. So I did -- I try to look at Google Earth</p> <p>16 and figure things out. But, again, I don't think there</p> <p>17 was, like, a location map that was provided. The data</p> <p>18 from China was very limited. There's no -- I don't</p> <p>19 think there's any GPS coordinates, which is another</p> <p>20 thing that's kind of odd. Okay. Go ahead.</p> <p>21 Q. If I were to represent to you that</p> <p>22 they're about 2,000 kilometers away from each other, the</p> <p>23 Hubei and Shandong are coastal by Shanghai and Guangxi</p> <p>24 is southern and internal and they're about</p> <p>25 2,000 kilometers away from each other, would you have</p>	<p>1 Q. Yes. Just answer my questions, okay?</p> <p>2 And, again, there's no evidence that talc ever came from</p> <p>3 Hubei and Shandong that was used in Johnson & Johnson</p> <p>4 talcum powder. You, sitting here today, without</p> <p>5 speculating, can't tell me that Johnson & Johnson ever</p> <p>6 used talc that came from Hubei and Shandong, correct?</p> <p>7 A. Correct.</p> <p>8 Q. And then it continues on, and it starts</p> <p>9 talking about the detailed visit to the Liboshikuang</p> <p>10 Mine in the Shandong province, correct? It's two</p> <p>11 paragraphs down. It talks about the field report and</p> <p>12 "the report detailed a visit?</p> <p>13 A. The second paragraph on the bottom?</p> <p>14 Q. Yes.</p> <p>15 A. In Shandong? Okay.</p> <p>16 Q. Okay. And, again, it talks about a mine</p> <p>17 that you have no evidence whatsoever whether or not this</p> <p>18 has any geological similarity to the Shandong province</p> <p>19 or the Guangxi province, correct?</p> <p>20 MS. SCOTT: Objection.</p> <p>21 A. Specifically, no. There is no data that</p> <p>22 was --</p> <p>23 BY MR. FROST:</p> <p>24 Q. So what I'm getting at here is I'm a</p> <p>25 little confused why we're talking about talc districts</p>

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<p>1 upon which you have no data that are thousands of 2 kilometers away from the mine actually being used by 3 Johnson & Johnson.</p> <p>4 MS. SCOTT: Form.</p> <p>5 A. Because just like in, as you pointed out 6 for the Appalachians, we have this very large district 7 that extends hundreds of kilometers. Based on the 8 limited data that was available to me, it's likely that, 9 essentially, talc deposits are genetically related in 10 some way.</p> <p>11 BY MR. FROST:</p> <p>12 Q. Except that didn't you just tell me 13 without speculating --</p> <p>14 MS. O'DELL: Excuse me.</p> <p>15 MR. FROST: Old on.</p> <p>16 MS. O'DELL: He was not finished.</p> <p>17 A. So, basically, it's reasonable, you know, 18 so if you have -- you know, you have a deposit of 19 something, and you have similar deposits of that same 20 something, that it's reasonable that you would expect 21 there to be some connection or relationship. That's 22 something that we do in geology all the time, 23 essentially develop hypotheses as far as spatial 24 relationships of things.</p> <p>25 So, basically, the fact that there's</p>	<p>1 MS. SCOTT: Objection.</p> <p>2 BY MR. FROST:</p> <p>3 Q. You don't know one way or the other; is 4 that correct?</p> <p>5 MS. SCOTT: Objection.</p> <p>6 MS. O'DELL: Objection.</p> <p>7 A. With a hundred percent degree of 8 certainty, sure. But, geologically, it makes sense that 9 things would be related.</p> <p>10 BY MR. FROST:</p> <p>11 Q. Okay. And that's based on what studies 12 have you looked at in China that show you can make the 13 leap to say that these regions that you don't --</p> <p>14 A. That's --</p> <p>15 Q. Hold on -- that you don't know anything 16 about are related?</p> <p>17 MS. SCOTT: Objection.</p> <p>18 A. I base that on, essentially, just the 19 nature of tectonics on the planet. Essentially, there's 20 no peer review literature.</p> <p>21 BY MR. FROST:</p> <p>22 Q. Turn to page 12. It's the first full 23 paragraph. "I have reviewed multiple documents." It is 24 the paragraph that starts there. Do you see where I am?</p> <p>25 A. Yes.</p>
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<p>1 60 percent white talc and 40 percent black talc with the 2 latter having obvious tremolite association, so that's, 3 okay, one thing. And then, notably, it was associated 4 with amphibolite-grade metamorphism. Therefore, 5 Johnson & Johnson and Imerys had information regarding 6 tremolite's presence in the region.</p> <p>7 And if you had indication of the presence 8 of something in the region, you know, you might exclude 9 that or you would want to do further exploration to sort 10 of constrain, as we mentioned earlier, with mining, we 11 want to define what's not there and what is there.</p> <p>12 BY MR. FROST:</p> <p>13 Q. But here's where I'm going stop you. All 14 of this concerns a region that's thousands of kilometers 15 away from the region that's actually being mined, right?</p> <p>16 MS. SCOTT: Objection.</p> <p>17 BY MR. FROST:</p> <p>18 Q. So what does any of this actually have 19 anything to do, without speculating, about the talc 20 coming from the Zhizhua Mine in the Guangxi Province?</p> <p>21 MS. SCOTT: Objection.</p> <p>22 A. The geology can be potentially related.</p> <p>23 BY MR. FROST:</p> <p>24 Q. See, we're talking about can be here, but 25 you're speculating, right?</p>	<p>1 Q. Where is it? The third sentence. You 2 know that "The practices and procedures defendants' talc 3 fall short of satisfying international standards of 4 quality and purity." What international standards of 5 quality and purity are you talking about here that you 6 didn't cite?</p> <p>7 A. So industrial mineral companies, 8 basically, we used the peer-review literature, and 9 essentially, things are developed internally to assure 10 that you have variability or control, and so it's 11 commonly done that you run multiple x-ray diffraction 12 analyses on materials, for example. So a company I work 13 closely with in Virginia, or have historically, they 14 analyze 200 samples a day, essentially, and they do that 15 with powder diffraction and, also, XRF.</p> <p>16 There's analytical technologies that 17 exist that you can do rapid XRF analyses with a handheld 18 device, and that's been around since the early 2000s. 19 So, basically, the peer-review literature is one general 20 way of doing things.</p> <p>21 Q. And then -- well, hold on. We'll start 22 there. What studies? Can you point me a single study 23 that talks about the international standards of quality 24 and purity that weren't met here?</p> <p>25 MS. SCOTT: Objection.</p>

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<p>1 A. So methods are communicated verbally in 2 industrial mineral companies. So, basically, by 3 interacting with companies, I know, basically, that you 4 analyze things repeatedly, repeatedly trying to 5 constrain the variability. Things aren't necessarily, 6 as far as what individual companies do, they look to the 7 peer-review literature to use or learn what analyses are 8 done and how they are executed.</p> <p>9 As far as the numbers of things, that's 10 something that's decided by companies, and basically, 11 using general statistical approaches, they want to know 12 what the variation is. So companies that I work with, 13 they commonly will analyze hundreds of, a couple hundred 14 samples a day or a week.</p> <p>15 Other companies I know, they have 16 dedicated labs that basically analyze hundreds of 17 thousands of samples a week, and it's expected that they 18 maintain that level because, eventually, they can get 19 sold or bought, so they want to be able to prove the 20 reserves and the historical thing. So that's -- that's 21 kind of the international standard is sort of multiple 22 things. It's by experience.</p> <p>23 Q. Here's what I want to get at. If I want 24 to know what the international standards of quality and 25 purity are, you're telling me there's not any document I</p>	<p>1 you if you want.</p> <p>2 A. Yeah. I need to look at it, but I think 3 that might be related to gold mining, but Gy is 4 something that's used in general.</p> <p>5 Q. Is Gy a universally adopted standard for 6 mining practices around the world?</p> <p>7 A. I think it's commonly used. Again, every 8 company has their own.</p> <p>9 Q. Why don't we look at Afewu, but, again, 10 you agree with me that Gy is one. There are probably 11 hundreds, if not thousands, of competing theories and 12 methodologies, right?</p> <p>13 MS. SCOTT: Objection.</p> <p>14 MS. O'DELL: Objection.</p> <p>15 A. I don't think that's an accurate 16 statement.</p> <p>17 BY MR. FROST:</p> <p>18 Q. But it's certainly not the only one, 19 right?</p> <p>20 A. Others exist.</p> <p>21 Q. So you can't tell me that Gy is the 22 universal standard for talc mining, right, and that 23 that's the standard that companies have to follow? 24 That's the, quote, international standard of quality and 25 purity?</p>
<p style="text-align: center;">Page 207</p> <p>1 can go to, any regulation or anything out there. I'm 2 trying to get the basis for your opinion here, and the 3 basis for your opinion here is Dr. Krekeler had told me 4 it's wrong and here's why, and you can't point to any 5 study --</p> <p>6 A. So --</p> <p>7 MS. O'DELL: Let him finish.</p> <p>8 THE WITNESS: Okay.</p> <p>9 BY MR. FROST:</p> <p>10 Q. -- regulation, mine document, anything 11 out there to support your basis. It's just I, Mark 12 Krekeler, am telling you this. You should believe me.</p> <p>13 MS. SCOTT: Objection.</p> <p>14 A. So Gy and the reference. Gy 79 is 15 something that's used sampling of particulate materials 16 there in practice.</p> <p>17 BY MR. FROST:</p> <p>18 Q. Let's talk about Gy. Gy is about gold 19 mining, right?</p> <p>20 A. Gy is about sampling of particulate 21 materials.</p> <p>22 Q. Related to gold mining, right?</p> <p>23 A. I don't recall specifically. Was it 24 Afewu? I believe the Afewu.</p> <p>25 Q. If you look at Afewu, I can mark that for</p>	<p style="text-align: center;">Page 209</p> <p>1 MS. SCOTT: Objection.</p> <p>2 A. I think it's relevant.</p> <p>3 BY MR. FROST:</p> <p>4 Q. We'll mark Afewu. We talked about Afewu.</p> <p>5 A. So if you're mining --</p> <p>6 Q. There's not a question pending, sir.</p> <p>7 A. Okay. Sorry.</p> <p>8 MS. O'DELL: This is 20?</p> <p>9 MR. FROST: 18.</p> <p>10 COURT REPORTER: 19.</p> <p>11 MR. FROST: 19?</p> <p>12 COURT REPORTER: Yes.</p> <p>13 (Exhibit 19 was marked for 14 identification.)</p> <p>15 BY MR. FROST:</p> <p>16 Q. On the first page, it's page 299 on the 17 first column. It's the paragraph that starts, "An 18 essential condition of any sample."</p> <p>19 A. Okay. I found the paragraph.</p> <p>20 Q. Okay. About halfway through, it starts 21 talking about the Gy paper. "A number of approaches 22 have been proposed to address these problems. The most 23 notable one is the work of Gy." Do you see where I am?</p> <p>24 A. Yes.</p> <p>25 Q. After that, it says, "Most practitioners</p>

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<p>1 have used this model for gold ores, though, without much 2 fulfillment in the results." Am I reading that 3 correctly?</p> <p>4 A. You're reading what they've said.</p> <p>5 Q. Okay.</p> <p>6 A. But, yeah.</p> <p>7 Q. And you agree with me that there are laws 8 and regulations that relate to mining standards, how 9 mining has to be done, things of that nature, correct?</p> <p>10 A. There are -- there's a code of mining 11 regulations. To my knowledge, there's not a specific 12 code as far as what's required for sampling. It's my 13 experience that, essentially, it's based on indications 14 from peer-reviewed literature, the concerns the company 15 has had as far as maintaining quality of their product, 16 so these are the standards that are set. Some companies 17 will have, essentially, internal protocols and standards 18 that are applied, and they're international companies, 19 so this is applied by international.</p> <p>20 Q. So you don't believe there are any 21 regulations that relate to any miners that talk about 22 requirements of sampling?</p> <p>23 MS. SCOTT: Objection.</p> <p>24 A. At this point, I don't remember. I 25 don't --</p>	<p>1 Gy paper, and he talks about running Gy analysis of the 2 samples to determine whether or not they're 3 representative. Is that a fair sort of, really high 4 level synopsis of what he's talking about?</p> <p>5 A. Yes.</p> <p>6 Q. And in forming your opinions, I take it 7 you rely -- I mean, we've talked about Gy. You're 8 relying on the Gy theory, right? Is it a theory? I 9 don't know what the right word to call it is. Is it 10 mine theory?</p> <p>11 A. It is an approach.</p> <p>12 Q. Mine approach?</p> <p>13 A. Yeah. It's very dense mathematically.</p> <p>14 Q. I will agree with you there. And you're 15 effectively relying on the Gy approach in forming your 16 opinions about the mining sampling practices, correct?</p> <p>17 A. It is one of them. It is one approach, 18 yes.</p> <p>19 Q. And Afewu and Lewis is another one you 20 cite, too?</p> <p>21 A. It's another example.</p> <p>22 Q. And Afewu and Lewis also is another 23 mathematical geostatistical computation to determine 24 whether or not sampling is adequate and representative, 25 correct?</p>
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<p>1 BY MR. FROST:</p> <p>2 Q. "I don't know" is a fine answer, sir.</p> <p>3 A. Yeah. I don't know with certainty.</p> <p>4 Q. Okay. And I think we established this 5 morning, you're not a regulatory expert? You're not a 6 mine regulations expert?</p> <p>7 A. Yeah.</p> <p>8 Q. Okay. So at this point, you just don't 9 know. Have you ever heard of the organization JORC, 10 J-O-R-C?</p> <p>11 A. What's that?</p> <p>12 Q. JORC, J-O-R-C. I think it's the Joint 13 Regulatory Commission, something like that.</p> <p>14 A. No, I have not.</p> <p>15 Q. Do you recall seeing, in several of the 16 Imerys documents, that they were doing sampling to 17 various JORAC regulatory specifications?</p> <p>18 A. No, I do not remember seeing that.</p> <p>19 Q. And you have no idea what any of the 20 sampling regulations that they're applying for would be? 21 That's correct?</p> <p>22 MS. O'DELL: Object to the form.</p> <p>23 A. Yeah. I'm not familiar with that.</p> <p>24 BY MR. FROST:</p> <p>25 Q. While we're talking about Gy, I read the</p>	<p>1 A. Yes. That's another approach.</p> <p>2 Q. Have you actually run any of the 3 geostatistical calculations in this case to determine 4 whether or not the sampling that was being done by 5 Imerys and Johnson & Johnson is adequate?</p> <p>6 MS. SCOTT: Objection.</p> <p>7 A. No, I have not. But I do note that I did 8 not see evidence of it either.</p> <p>9 MR. FROST: Move to strike. No question 10 was pending.</p> <p>11 BY MR. FROST:</p> <p>12 Q. While we're on mining, let's talk about 13 it a little bit. Do you agree with me that mining 14 companies do not mill -- sorry. Let me try again. I 15 used the wrong word. Do you agree with me that mining 16 companies do not drill the entire deposit all at once?</p> <p>17 MS. O'DELL: Object to the form. Do you 18 mean --</p> <p>19 BY MR. FROST:</p> <p>20 Q. When they're doing core sampling?</p> <p>21 A. They will -- it depends. So if there's 22 field indications that things are looking good and they 23 want to establish things, then there would be a reason 24 to drill the entire deposit if it's small. But, yeah, 25 if you have a large deposit, you would drill that in</p>

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<p>1 phases.</p> <p>2 Q. And you'd sort of do it as the mine</p> <p>3 develops, right, as the -- as you're following the</p> <p>4 deposit? You -- a really untechnical way of saying it</p> <p>5 is, effectively, you're drilling ahead of where you are</p> <p>6 so you know where you can keep going, right?</p> <p>7 MS. SCOTT: Objection.</p> <p>8 A. It -- sometimes it's more complex than</p> <p>9 that. So, basically, people gain investment for</p> <p>10 exploration and it's -- you know, the investors are set</p> <p>11 on doing things one particular way because of what they</p> <p>12 believe. So there's variation in that.</p> <p>13 Q. Okay. And you agree that additional --</p> <p>14 you know, one of the reasons you do additional coring,</p> <p>15 additional drilling, is to further refine the mine plan,</p> <p>16 the mine schedule, things like that?</p> <p>17 A. Yes. So, often, coring will be done</p> <p>18 every day in certain situations. So that's the case in</p> <p>19 some palygorskite deposits in Georgia, and that's also</p> <p>20 the case in Brown Mountain Mine and other, other</p> <p>21 situations, yes. They'll drill daily and produce lots</p> <p>22 of core.</p> <p>23 Q. And, ultimately, mine operators are</p> <p>24 drilling a mine site in order to determine what the ore</p> <p>25 body itself actually looks like, right?</p>	<p>1 factor is the scale of the geologic features that are</p> <p>2 involved in the deposit. So, generally, you want to</p> <p>3 have a core density such that you can capture those</p> <p>4 scales of features.</p> <p>5 Q. And that's ore deposit -- by "ore</p> <p>6 deposit," depending, right, what you have to do to</p> <p>7 capture those features? Effectively, every mine is</p> <p>8 different; is that a fair synopsis?</p> <p>9 MS. SCOTT: Objection.</p> <p>10 A. The -- it depends on the local geology,</p> <p>11 but it still must be representative based on the</p> <p>12 features you're trying to capture.</p> <p>13 BY MR. FROST:</p> <p>14 Q. Okay. I think we're saying the same</p> <p>15 thing. You're just adding a lot more words, right?</p> <p>16 A. Okay.</p> <p>17 Q. But it depends on the local geology what</p> <p>18 the deposit looks like because every deposit is</p> <p>19 different, right?</p> <p>20 MS. SCOTT: Objection.</p> <p>21 A. You can have similar deposits, but, yeah,</p> <p>22 every deposit is in a different location.</p> <p>23 BY MR. FROST:</p> <p>24 Q. Sure. And there are different shapes and</p> <p>25 sizes, right?</p>
<p>1 A. As well as other areas of concern. So I</p> <p>2 gave the example on the Stebbins Hill for Brown</p> <p>3 Mountain. And they, you know, they have extensive</p> <p>4 amounts of core. They filled an entire high school,</p> <p>5 abandoned high school, with core.</p> <p>6 Q. Where you mine -- or sorry. Where you</p> <p>7 drill, when you drill, what angle you're drilling at, et</p> <p>8 cetera, all these are very complicated. You know, in a</p> <p>9 complicated ore body, where you drill, when you drill,</p> <p>10 the angles you drill at, these are all dictated by lots</p> <p>11 of factors, including topography, access to certain</p> <p>12 areas, things of that nature. Do you agree with that</p> <p>13 statement?</p> <p>14 MS. O'DELL: Objection.</p> <p>15 A. Not necessarily. You may -- people want</p> <p>16 to essentially have a good, even distribution so they</p> <p>17 try to drill on a grid, you know, if possible.</p> <p>18 BY MR. FROST:</p> <p>19 Q. Okay. As you said, not necessarily. It</p> <p>20 all depends, sort of, what you're seeing and what you're</p> <p>21 looking for, correct? There's no one way to drill core</p> <p>22 and ore body, right?</p> <p>23 A. There's multiple ways, but, you know,</p> <p>24 using -- essentially having something that is</p> <p>25 representative is reasonable. And one determining</p>	<p>1 A. Yes.</p> <p>2 Q. So because of that, you have to drill</p> <p>3 appropriate to the deposit that you're coring, correct?</p> <p>4 A. Yes.</p> <p>5 Q. And that's a determination that's usually</p> <p>6 made by the on-site geologist or by the company that's</p> <p>7 mining. You know, hopefully, they're consulting with</p> <p>8 somebody who understands the geology to determine where</p> <p>9 to drill. Is that also a fair statement?</p> <p>10 MS. SCOTT: Objection.</p> <p>11 A. Ultimately, the company is responsible</p> <p>12 for how it drills, yes.</p> <p>13 BY MR. FROST:</p> <p>14 Q. Okay. Turn back to page 12 of your</p> <p>15 report. It's the third paragraph. You note that, "The</p> <p>16 practice of hand sorting is not acceptable in the United</p> <p>17 States." Do you have any law or regulation that you're</p> <p>18 pointing to that says that's inappropriate?</p> <p>19 MS. SCOTT: Objection.</p> <p>20 A. No. But, you know, the companies I work</p> <p>21 with wouldn't do that with something of this complexity.</p> <p>22 BY MR. FROST:</p> <p>23 Q. And you've never worked with talc before,</p> <p>24 right? You've never worked with a company that mines</p> <p>25 talc?</p>

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<p>1 A. Correct.</p> <p>2 Q. Okay. The next paragraph down, the -- I 3 believe this is an email. Maybe I'll just mark the 4 document. It might be easier.</p> <p>5 MR. FROST: We'll mark this one. I think 6 we're on 20.</p> <p>7 COURT REPORTER: 20.</p> <p>8 (Exhibit 20 was marked for 9 identification.)</p> <p>10 BY MR. FROST:</p> <p>11 Q. Do you see where you are in your report 12 on page 12?</p> <p>13 A. I'm checking to see. I'll go back.</p> <p>14 Q. Sorry.</p> <p>15 A. Go back to 12. So 517. Okay.</p> <p>16 Q. And this is -- you're quoting here from 17 an email --</p> <p>18 A. Okay.</p> <p>19 Q. -- from Mr. Cutler? Do you see where we 20 are?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. So you quote a portion of this 23 email from Mr. Cutler, right? And then the next 24 paragraph down, you go, "Cutler goes on to say, In 25 principle, the inspection is enough to guarantee the</p>	<p>1 bottom of 5147 -- I'll go two lines up. I'll start 2 there. There's some stuff above it, but it starts, 3 "During unloading, a representative industrial sample 4 (at least 25mt) is processed in the plant at various 5 meshes and sent to our central Denver lab to be analyzed 6 for main specs (whiteness, mineralogy, chemical 7 composition, major elements and traces). Fibers 8 investigation is carried out systematically. The lot is 9 quarantined, waiting the lab results." Don't you agree 10 with me that's the most important piece of what Cutler 11 is saying there --</p> <p>12 MS. SCOTT: Objection.</p> <p>13 BY MR. FROST:</p> <p>14 Q. -- for purposes of your opinion that it 15 does not guarantee the absence of fibers or asbestos and 16 fibrous talc?</p> <p>17 MS. SCOTT: Objection.</p> <p>18 A. So when the cargo arrives at destination, 19 so that's after it's been hand picked, right?</p> <p>20 BY MR. FROST:</p> <p>21 Q. Sure. What I'm saying here is: You use 22 the quote you have above as a basis for your --</p> <p>23 A. So they're not -- I'm stating --</p> <p>24 Q. Let me finish, sir.</p> <p>25 A. Okay. I'm sorry. Sorry.</p>
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<p>1 requested specs to insure no fibers." And then, after 2 that, you make the opinion, "That practice falls below 3 the standards of quality control in mining operations in 4 the United States, and it does not guarantee the absence 5 of fibers, such as asbestos or fibrous talc." Did I 6 read that correctly?</p> <p>7 A. Yes.</p> <p>8 Q. Okay. If you look up at the quote from 9 Mr. Cutler's email and if you turn to the email itself, 10 it's the bottom of page 5147. This is not a complete 11 quote from Mr. Cutler's email, correct?</p> <p>12 MS. SCOTT: Objection.</p> <p>13 A. Let me find -- so where is it on 5147?</p> <p>14 BY MR. FROST:</p> <p>15 Q. It's at the bottom.</p> <p>16 MS. SCOTT: It's in B.</p> <p>17 BY MR. FROST:</p> <p>18 Q. Yeah, it's in B.</p> <p>19 A. So "In principle, this inspection is 20 enough to guarantee the requested specs and insure no 21 fibers."</p> <p>22 Q. Okay. But do you see above that your 23 block quote? So what I find interesting is the part you 24 left out of Mr. Cutler's email is actually the part that 25 talks about the testing for fibers. If you look at the</p>	<p>1 Q. So you use the quote above here as the 2 basis for your statement that the practice falls below 3 the standards of quality in mine operations in the 4 United States and does not guarantee the absence of 5 fibers such as asbestos and fibrous talc, but left out 6 of the quote you're taking from the email is the 7 specific part of the testing that talks about the 8 testing for fibers in the talc. Am I correct or 9 incorrect?</p> <p>10 A. I did not include that portion in the 11 quote.</p> <p>12 Q. Okay. Let's move on.</p> <p>13 A. I --</p> <p>14 Q. All right. Moving on.</p> <p>15 A. Okay.</p> <p>16 MS. SCOTT: If he's not done with his 17 answer, let him finish his answer.</p> <p>18 A. But, yeah, I'm not. So it is -- you 19 know, if you're mining material and then you have a 20 point of shipment, you would want to test that at that 21 point of shipment in case you find something later. You 22 would be able to identify where in the supply chain an 23 issue occurred. So is this -- you know, is this shipped 24 by a ship, correct? Right? So multiple things can be 25 put into a ship cargo. You can have a whole crate of</p>

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<p>1 asbestos, you know, from Indiana or Russia or some other 2 place or some other material that is mixed in. So, to 3 me, it really does make sense that at the stage of when 4 it leaves the port, you would want to have some quality 5 control so --</p> <p>6 BY MR. FROST:</p> <p>7 Q. Here's my question. Isn't that exactly 8 the part that you left out of the quote? Isn't it 9 disingenuous that you left out the fibrous talc?</p> <p>10 A. As I read it, as I read it --</p> <p>11 MS. O'DELL: Dr. Krekeler, he's not done.</p> <p>12 A. Oh, I'm sorry. Sorry.</p> <p>13 BY MR. FROST:</p> <p>14 Q. Don't you agree with me that it's 15 disingenuous to leave out the specific portion of the 16 quote that talks about the testing that's done once the 17 talc arrives at port in Houston when you're making, 18 based on that quote, the opinion that it does not 19 guarantee the absence of fibers and falls short?</p> <p>20 MS. SCOTT: Objection. Misrepresents.</p> <p>21 A. Yeah. I say it's in the report for the 22 reasons I provided.</p> <p>23 BY MR. FROST:</p> <p>24 Q. Okay. All right. Let's move on.</p> <p>25 MR. FROST: Actually, if you want, I</p>	<p>1 A. Yes.</p> <p>2 Q. Okay. What is the basis that grinding 3 the sample before testing will make it much more 4 difficult to --</p> <p>5 A. So talc is a phyllosilicate mineral. 6 It's a two-to-one layer clay. Essentially, the 7 structure is held together by long hydrogen bonds and it 8 is mechanically very soft. So, basically, 9 phyllosilicates have essentially delicate structures and 10 they need to be prepared in specific ways so grinding is 11 a rotary motion and what that does is -- the crystal 12 structure is shown here for talc.</p> <p>13 So what that does is it takes these 14 two-to-one layers. When you grind, you displace, you 15 know, essentially, a rotation of the crystal structure, 16 and that rotation of the crystal structure basically 17 destroys the crystallographic coherency through the clay 18 particle. So if you are -- essentially, for x-ray 19 analysis, you're supposed to crush materials. So crush 20 is specifically an up-and-down motion. And, basically, 21 it's easy to do with talc. You crush it in this 22 up-and-down motion, typically in an agate mortar and 23 pestle.</p> <p>24 And then so, basically, what happens is 25 you also have other potential contaminants such as</p>
<p>1 don't know how long we've been going. This is 2 probably a good time for a break. I'm changing 3 subjects.</p> <p>4 MS. SCOTT: Sure. Great.</p> <p>5 VIDEOGRAPHER: We are now going off 6 record. The time is 4:12.</p> <p>7 (A recess was taken from 4:12 to 4:38.)</p> <p>8 VIDEOGRAPHER: We're now back on record, 9 and the time is 4:38.</p> <p>10 BY MR. FROST:</p> <p>11 Q. I'm going to move back to page 12 --</p> <p>12 A. Okay.</p> <p>13 Q. -- of your report. The last full 14 paragraph on page 12, sir, it's a document entitled 15 "Quality Control."</p> <p>16 A. Okay.</p> <p>17 Q. Okay. And you note, "This document 18 includes procedures related to Guangxi Number 1 and 19 Number 2A, the talc ore purchased by Defendants for use 20 in Johnson's Baby Powder and Shower to Shower products. 21 Again, the procedure calls for samples to be ground 22 prior to testing a protocol that will disrupt the 23 physical properties of the talc ore, making detection of 24 harmful contaminants, including asbestos, much more 25 difficult." Did I read that right?</p>	<p>1 chrysotile. Chrysotile is a one-to-one layer 2 serpentine. It is coiled because the octahedral sheet 3 and the tetrahedral sheet don't match up. So there's 4 other serpentines such as antigorite, lizardite, 5 crocidolites, other things like that.</p> <p>6 So what needs to happen is, again, that 7 needs to be prepared in a crush method, not a rotary, 8 not ground. So grinding -- ground, grinding -- those 9 words have specific meanings in the context of 10 phyllosilicates. It's been well, recognized, and I 11 provide several references elsewhere in the report.</p> <p>12 So essentially what happens is x-ray 13 diffraction has detection limits, and for many 14 materials, such as quartz, that are very crystalline, 15 your detection limit is approximately about a tenth of a 16 weight percent, and that's generally understood. That's 17 a long-standing detection limit.</p> <p>18 Clay minerals, in general, the 19 phyllosilicates, in general, those materials typically 20 have a detection limit that is at least a few weight 21 percent, in part because they start off as essentially 22 poorly crystalline material. So if you take a talc or a 23 chlorite and you compare that to another, you know, a 24 mineral such as a pyroxene, the overall crystallinity of 25 the pyroxene is much, much more than the talc or the</p>

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<p>1 chlorite. So and then there's also many issues with -- 2 the minerals are just very sensitive, and they naturally 3 have disorder.</p> <p>4 For example, chlorite theoretically can 5 have 1,024 different arrangements of the layers of atoms 6 in the structure, two-layer structure. So, basically, 7 the crushing and grinding, you can grind -- if you have, 8 let's say you have 4 percent chrysotile and 96 percent 9 talc and you have that sample and you grind it, and 10 essentially, you are destroying the crystal structures 11 of both, and you only have, essentially, a 1 percent or 12 so that is still crystalline or maybe none of it is 13 crystalline.</p> <p>14 You can grind, actually do experiments 15 and grind things to be amorphous. We did this when I 16 was a Ph.D. student. He had us hammer home the point. 17 But, basically, so the net effect is is when you grind 18 stuff, you deflate the detection limit of materials that 19 are there.</p> <p>20 It's already a problem -- you know, 21 chrysotile is already problematic because, essentially, 22 the shape of it. So it's a difficult material to work 23 with. When you grind those materials, you will end up 24 with, essentially, stuff that won't diffract. So, 25 therefore, with powder x-ray diffraction, you cannot be</p>	<p>1 crush and smear, correct? 2 MS. O'DELL: Objection. 3 A They would be far less -- I think the 4 proper thing to say is they would be far less 5 susceptible to reduction and crystallinity, but, yeah, 6 the chrysotile would be. 7 BY MR. FROST: 8 Q Okay. But, again, chrysotile is not -- 9 because of the closeness to talc, XRD is not the primary 10 way of identifying chrysotile, correct? 11 A Oh, no. 12 Q I'm talking about specific to talc here. 13 A Were -- I'm sorry, was the question can 14 you -- the difference -- 15 Q Not can you, no. 16 A -- between talc and chrysotile? 17 Q Okay. Let me ask it another way. In the 18 testing that is done of talc to determine whether or not 19 there is asbestos, the way -- the test for chrysotile, 20 you'll agree with me, is PLM, correct? 21 A I understand that powder x-ray 22 diffraction is the primary screen. 23 Q That's the first screen, correct? 24 A Yes. 25 Q Okay.</p>
<p>1 assured that what you're measuring that you detect. So 2 that's the issue with grounding. 3 Q Okay. So let me start here. Amphiboles 4 aren't phyllosilicates, correct, amphibole minerals? 5 MS. O'DELL: Amphiboles. 6 BY MR. FROST: 7 Q Or amphiboles. 8 A They're part of the biopyribolites. 9 Q Okay. 10 A So but they are not a -- 11 Q It's not phyllosilicate, correct? 12 A Correct. 13 Q And, again, the point of XRD, the 14 testing, is to determine whether or not there are 15 amphibole particles in the talc. Is that also correct? 16 MS. SCOTT: Objection. 17 A Yes. 18 BY MR. FROST: 19 Q Okay. So what you're talking about here 20 is we'd ruin the talc and it would be hard, but we don't 21 care because we know talc is in there. What we're 22 looking for are amphiboles, right? So crushing isn't 23 going to be a problem with identifying the amphiboles, 24 because they aren't subject to smear and amorphousness, 25 if that's the right word, but becoming amorphous through</p>	<p>1 A And then if -- then if there's something 2 that's detected, it then goes to PLM. And then if is 3 something is detected, it goes to TEM. So if you 4 don't -- if you're not -- if you're having, essentially, 5 a false negative because you've ground away the 6 chrysotile, you would not -- you know, as things were 7 described, you wouldn't go on to the other techniques, 8 but you would potentially have tremolite. 9 Q Yes. And you're actually going -- again, 10 you've looked at Longo's testing, right? 11 A Yes. 12 Q So would you invalidate Longo's testing 13 because he crushes and grinds the samples before putting 14 them through his various tests, including XRD? 15 MS. O'DELL: Objection. 16 A I -- there might be some differences, but 17 overall, my review of Longo's report, I think it's fine. 18 BY MR. FROST: 19 Q Okay. And, again, in looking through 20 Longo's report, despite that he crushed and smeared, did 21 he come up with any amorphous -- you know, did he 22 identify any amorphous figures within the talc? 23 MS. SCOTT: Objection. 24 MS. O'DELL: Object to form. 25 A I don't remember specific. I remember</p>

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<p>1 seeing lots and lots of TEM images by -- there's a lot 2 of TEM images. I don't remember specifically. 3 BY MR. FROST: 4 Q. You also agree with me that the amphibole 5 content that you're looking for in baby powder is 6 actually very small. We're talking about the micron 7 level, correct? 8 MS. O'DELL: Object to the form. 9 A. I'm sorry. What? 10 BY MR. FROST: 11 Q. We're talking about particles that are 12 measured by microns, not -- 13 A. For? 14 Q. -- inches or centimeters for the -- 15 A. For what context? 16 Q. The amphiboles -- 17 A. The amphiboles? 18 Q. -- that would be located in ground talcum 19 powder. 20 A. I'm sorry. I'm unclear on the question. 21 Can I -- 22 Q. I'll just ask it again. 23 A. Well, I would prefer to read, if that's 24 okay. 25 Q. Well, I'd prefer to reask you the, ask</p>	<p>1 or done by anybody else, have you ever seen any problem 2 with either smear or amorphous? 3 MS. SCOTT: Object to the form. 4 A. Yeah. By the nature of the test, as it's 5 been described, you know, you can't, you can't see -- I 6 want to say you can't see something that is not, that 7 you can't detect. So amorphous material doesn't 8 diffract x-rays. So x-rays arise when we have coherent 9 crystallinity that occurs. And then I'm trying to -- 10 BY MR. FROST: 11 Q. I understand, but let me stop you there. 12 You would see amorphous on TEM or SEM, wouldn't you, 13 when you were looking at images of the talc after it's 14 been prepared for a sample? 15 MS. O'DELL: Objection. 16 A. The -- only if you're, only if you're 17 looking for it. So you need to have electron 18 diffraction data that -- you said if you're only looking 19 for the asbestos materials so you're looking for 20 crystalline materials. You would not necessarily be 21 looking for amorphous. So I don't think Longo was 22 tasked with finding amorphous, amorphous 23 phyllosilicates. I think he -- 24 BY MR. FROST: 25 Q. But I'm confused. Doesn't Longo</p>
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<p>1 you a different question, sir. 2 A. Okay. All right. Good. 3 MS. O'DELL: He can ask a different 4 question. 5 BY MR. FROST: 6 Q. So, again, my question is: The 7 amphiboles that we care about here, the ones we're 8 finding in the testing of talcum powder, are in microns 9 of size. They're tiny, correct? 10 A. They can be, yes. 11 Q. Okay. And because they're so small and 12 small by volume, grinding and crushing really isn't a 13 problem because you're not going to affect the 14 crystalline structure of something that small when you 15 grind it. Do you also agree with that? 16 MS. SCOTT: Objection. 17 A. Not necessarily. It depends on the 18 specific methods of grinding. 19 BY MR. FROST: 20 Q. And have you seen any evidence in any of 21 the testing that you've looked at in this case that 22 grinding and crushing has caused a problem with smear or 23 amorphous -- I guess it would become an amorphous 24 particle. I don't know what the right second term would 25 be. But in any of the testing you've seen done by Longo</p>	<p>1 categorize every particle that was on the TEM grids? 2 MS. O'DELL: Objection. In what way? 3 MR. FROST: He accounts for them on his 4 count sheets. 5 BY MR. FROST: 6 Q. If you don't know, sir, that's fine, too. 7 A. I don't remember. 8 Q. Okay. That's fine. We'll move on. 9 Now, sir, are you aware that talcum 10 powder, cosmetic talcum powder specifically is regulated 11 by the FDA? 12 MS. SCOTT: Objection. 13 A. I know they have looked at it. I don't 14 know if they've -- I'm not a regulatory expert. So I 15 just know that they've looked at it. I don't know that 16 there's a study on talc. 17 BY MR. FROST: 18 Q. I'm not talking about regulations, 19 regulations and testings -- 20 A. Oh, okay. I'm sorry. Yeah. No. 21 Q. Okay. All right. Are you aware that 22 there is an FDA sanction testing model called J4-1? 23 A. No, I'm not. 24 Q. Okay. And you don't know whether or not 25 the companies are using J4-1 to test their product</p>

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<p>1 because that's what's required of them?</p> <p>2 MS. O'DELL: Object to form.</p> <p>3 MS. SCOTT: Object to the form.</p> <p>4 A. No.</p> <p>5 BY MR. FROST:</p> <p>6 Q. Okay. Sir, do you agree with me that</p> <p>7 compliance with legal standards is an important</p> <p>8 consideration in determining if a mine is being operated</p> <p>9 correctly?</p> <p>10 MS. SCOTT: Objection.</p> <p>11 A. Yes, in general.</p> <p>12 BY MR. FROST:</p> <p>13 Q. And as we said before, you just don't</p> <p>14 know one way or the other whether or not -- well, I</p> <p>15 guess, what regulations govern these talc mines and</p> <p>16 whether or not the companies were abiding by those</p> <p>17 regulations. Is that fair?</p> <p>18 MS. SCOTT: Object to the form.</p> <p>19 BY MR. FROST:</p> <p>20 Q. That's not your area of expertise?</p> <p>21 A. Yeah. I'm not a regulatory expert.</p> <p>22 Q. Turn to page 39, I believe, of your</p> <p>23 report. One, two, third paragraph down, it says,</p> <p>24 "Examination of data from several mines."</p> <p>25 A. On page 39. "Examination of data from</p>	<p>1 for that statement, correct?</p> <p>2 A. Yes.</p> <p>3 Q. So we'll start at the first cite, which</p> <p>4 is Furtron or Furcron, F-u-r-c-r-o-n, and others, 1947,</p> <p>5 deposits of Murray -- talc deposits in Murray County,</p> <p>6 Georgia, Georgia State Division of Conservation</p> <p>7 Department of Mines, Mineralogy, Mining and Geology?</p> <p>8 A. Uh-huh.</p> <p>9 Q. Okay. You agree with me that they're</p> <p>10 looking at Georgia mine formations, correct?</p> <p>11 A. Yes.</p> <p>12 Q. And that would -- they'd have nothing --</p> <p>13 no opinions or no specifics of what the actual ore body</p> <p>14 in Vermont looks like or Italy or China, correct?</p> <p>15 MS. SCOTT: Objection.</p> <p>16 A. Correct.</p> <p>17 BY MR. FROST:</p> <p>18 Q. Okay. The second citation here is Berg</p> <p>19 1977, and I think that was the one we identified earlier</p> <p>20 that was a mis-cite?</p> <p>21 A. Yes. I think it relates to Montana.</p> <p>22 Q. All right. Tab -- the next one is</p> <p>23 Mark -- where is it? Sandrone and Zucchetti?</p> <p>24 A. So --</p> <p>25 (Exhibit 21 was marked for</p>
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<p>1 several mines," that paragraph?</p> <p>2 Q. Yes, that paragraph. Let me just orient</p> <p>3 myself. I apologize.</p> <p>4 All right. You note here, "Examination</p> <p>5 of data from several mines shows that ore bodies are</p> <p>6 very complex, with mixtures of several rock types,</p> <p>7 including those likely to have the presence of asbestos</p> <p>8 and heavy metals. These rock types are intimately mixed</p> <p>9 with talc ore. The variation of the bodies of rock</p> <p>10 differs and significant features may be only one foot</p> <p>11 thick or less." Correct?</p> <p>12 A. Yes. That is what it says.</p> <p>13 Q. Are you talking about the features there</p> <p>14 of the talc ore itself or are you talking about the</p> <p>15 other minerals that might be in the geological</p> <p>16 formation?</p> <p>17 A. So I'm talking about the ore as a whole,</p> <p>18 including, you know, lithologies that are rich in talc</p> <p>19 and not as well as the minerals and all the constituents</p> <p>20 of ore.</p> <p>21 Q. So you're talking about the ore body? I</p> <p>22 just want to clarify what we're talking about there.</p> <p>23 All right.</p> <p>24 A. Yes.</p> <p>25 Q. And that's Footnote 36, is the support</p>	<p>1 identification.)</p> <p>2 BY MR. FROST:</p> <p>3 Q. So it seems like this is talking about</p> <p>4 the Italian deposit.</p> <p>5 A. Yes. So, yeah.</p> <p>6 Q. You go one, two, three, four.</p> <p>7 MR. FROST: Oh, I apologize I thought he</p> <p>8 had the paper in front of him.</p> <p>9 COURT REPORTER: No.</p> <p>10 MR. FROST: Oh, I'm sorry.</p> <p>11 BY MR. FROST:</p> <p>12 Q. I'll reask the question. She didn't get</p> <p>13 it.</p> <p>14 So the question was: This paper appears</p> <p>15 to be dealing with the Italian mines, correct, the</p> <p>16 Italian deposit?</p> <p>17 A. Yes. Can I state a clarification?</p> <p>18 Q. Sure.</p> <p>19 A. So this is actually meant as an</p> <p>20 introduction paragraph. So several mines, meaning</p> <p>21 several mines of talc, in general.</p> <p>22 Q. Okay.</p> <p>23 A. So that sentence does not specifically</p> <p>24 relate to -- as written doesn't necessarily relate to</p> <p>25 mines in Vermont but just in general.</p>

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1	Q. Okay.	1 A. No, I did not.
2	A. So --	2 Q. Do you know if your counsel provided the
3	Q. So it's not a statement --	3 charts that you created to Dr. Cook?
4	A. The thing that's gone, the Berg paper	4 MS. SCOTT: Objection.
5	shows really intimate associations of, you know,	5 A. I don't know if they did or not. I
6	small-scale features. So it's meant to be general.	6 presume not. He looked at the same -- I think he looked
7	Sorry.	7 at the same sets of documents. It doesn't surprise me
8	Q. Okay. So these aren't talking about any	8 that --
9	of the mines that we're specifically talking about here:	9 BY MR. FROST:
10	The Vermont mines, the Italian mine and the Chinese	10 Q. That they look exactly the same?
11	mines, the ones at issue on page 7 and 8 --	11 A. -- they're similar. I don't know if
12	A. That sentence does --	12 they're exactly the same. I didn't --
13	Q. -- of your report?	13 Q. Yeah. You didn't look at it in detail?
14	A. -- not refer to those, yes.	14 A. -- look at Cook's. I didn't look at
15	Q. Turn to page 41 of your report, please.	15 Cook's documents in detail.
16	The very -- the sentence that goes from 41 to 42.	16 Q. Bear with me a second. I have to go to
17	"Composite sampling is a flawed methodology to	17 the third box. It's far away.
18	adequately" monitor -- sorry. It's a typo, but --	18 (Exhibit 22 was marked for
19	"adequately monitoring for asbestos and toxic metals and	19 identification.)
20	should be reserved for products not intended for human	20 VIDEOGRAPHER: I'm going to make a
21	consumption or cosmetic use." And then you cite to the	21 general housekeeping announcement. If you've
22	Afewu paper?	22 got a laptop in front of you and you've got a
23	A. That is an editorial error. The Afewu	23 mic on, push it back a little bit and make sure
24	reference is there as its own parenthetical sentence.	24 your phones stay away from the mic wires.
25	Q. So you agree with me --	25 Thanks.
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1	A. I don't -- it's a typo.	1 MR. FROST: Can we go off the record for
2	Q. Okay. So you agree with me that Afewu	2 a second?
3	and Lewis don't talk about testing for heavy metals or	3 VIDEOGRAPHER: We're now going off
4	whether or not ores are meant for human consumption?	4 record. The time is 5:02.
5	A. Correct, yeah. That's a streaming, a	5 (Off the record.)
6	streaming reference. It's cited where -- it's just	6 VIDEOGRAPHER: We are now back on record,
7	stand alone. There's a period before it and a period	7 and the time is 5:10.
8	after it. Sorry about that.	8 BY MR. FROST:
9	Q. That's okay. All right. I'm going to	9 Q. All right, sir. If you look at page 21
10	turn to the various charts now that are in your report.	10 of your report, do you see the sample with the date
11	So as a preliminary question, did you review each of the	11 8/22/1985?
12	documents that are listed in the various documents?	12 VIDEOGRAPHER: I'm sorry, Counsel. Can
13	A. I looked at all these documents, yes.	13 you put that notebook lid down?
14	Q. Have you ever seen the expert report done	14 MR. FROST: Oh.
15	by Dr. Cook in this case?	15 VIDEOGRAPHER: Thanks.
16	A. Yeah. I have seen it recently, yes.	16 MS. O'DELL: 21.
17	Q. It was after you were done drafting your	17 A. 21, and what was the line on the table?
18	initial and supplemental reports? Do you know?	18 BY MR. FROST:
19	A. I believe so.	19 Q. 8/22/1985.
20	Q. Okay. I'll note that Dr. Cook seems to	20 A. Yes.
21	have the exact same lists that you do. Did you provide	21 Q. I'll move this binder, so it's out of the
22	these to him?	22 way.
23	A. We looked at the same data. I'm sorry.	23 And that relates to sample WMI 85-28 and
24	Q. Okay. I was going to say, did you	24 WMI 85-30?
25	provide the charts that you created to him?	25 A. Yeah, as indicated on the chart.

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<p>1 Q. Do you know where Samples 85-28 and 85-30 2 were mined?</p> <p>3 A. I'm looking at the document.</p> <p>4 Q. Yes. If you look for the actual 5 document, if you turn to Tab 1 in the book you have 6 there.</p> <p>7 A. I have Tab 1.</p> <p>8 Q. All right. Great.</p> <p>9 A. All right. Let me just read. Yes. As 10 is common, there's not -- it doesn't say the exact 11 location.</p> <p>12 Q. Would it surprise you to learn that these 13 samples came from a mine in San Andreas, California?</p> <p>14 MS. SCOTT: Objection.</p> <p>15 A. I did not know that.</p> <p>16 BY MR. FROST:</p> <p>17 Q. Turn to Tab 2. It's a document Bates 18 stamped JNJ 65646.</p> <p>19 A. I'm sorry. Tab 2?</p> <p>20 Q. Yeah. Turn to the second page.</p> <p>21 A. Okay. The second page.</p> <p>22 Q. Okay. And if you look at sample WMI 23 85-28, it notes that it's grade TC-700. Do you see 24 that?</p> <p>25 A. 85-28. Oh, okay. Yes.</p>	<p>1 A. Presumably, yeah.</p> <p>2 BY MR. FROST:</p> <p>3 Q. On page 12, if you go down to the next 4 sample listed, it's the 4/29/1986 sample.</p> <p>5 A. I'm sorry. Page 12?</p> <p>6 Q. I'm sorry. I meant page 21. I got it 7 backwards.</p> <p>8 A. Page 21. Okay. And I'm sorry. And what 9 was the line?</p> <p>10 Q. It's the next one down, 4/29/1986.</p> <p>11 A. 4/29/1986. So J&J 182. So is that --</p> <p>12 Q. That's Tab 4.</p> <p>13 A. Tab 4.</p> <p>14 Q. And do you see in the middle of page 15 we're talking here, it's sample number WMI 85-53, WMI 16 85-55 and WMI 85-57?</p> <p>17 A. Yes.</p> <p>18 Q. Okay. And those are the ones that 19 they're talking about in the letter about the chrysotile 20 detection?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. Do you know where these samples 23 were mined?</p> <p>24 A. We can just check. No.</p> <p>25 Q. Turn to Tab 5, sir. And that's the</p>
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<p>1 MS. O'DELL: What sample are you on in 2 the chart, Jack? I'm sorry.</p> <p>3 MR. FROST: It's WMI 85-28. It's on page 4 2.</p> <p>5 MS. O'DELL: I've got you. All right.</p> <p>6 BY MR. FROST:</p> <p>7 Q. And then looking down at 85-30, which is 8 the second sample, that is also grade TC-700, correct?</p> <p>9 A. Correct.</p> <p>10 Q. Okay. And those are the two samples we 11 saw from the Tab 1 document that appear in the chart, 12 right?</p> <p>13 A. Yes.</p> <p>14 Q. Okay. You now can turn to Tab 3, which 15 is a document that starts IMERYS 013723. If you turn to 16 the third page of it. The very bottom of the product 17 certification protocol on page 3. Yeah, I know. It's 18 tiny. I apologize. Do you see where it says, "San 19 Andreas, California, Red Hill Grade," and then it has 20 "TC-700, light" and "dark"?</p> <p>21 A. Yes.</p> <p>22 Q. Okay. This clearly indicates that these 23 two samples did not come from one of the Vermont mines 24 or the Italian or the Chinese mines, correct?</p> <p>25 MS. SCOTT: Object to the form.</p>	<p>1 document with Bates number JNJ 578888. You can turn to 2 the third page.</p> <p>3 A. Where is that on the --</p> <p>4 Q. It's on the --</p> <p>5 A. Chart?</p> <p>6 Q. No. It's the -- I was just identifying 7 for the record the document. It's Tab 5 of the binder.</p> <p>8 A. Tab 5, yes.</p> <p>9 Q. If you turn to the third page --</p> <p>10 MS. SCOTT: 8890.</p> <p>11 BY MR. FROST:</p> <p>12 Q. Yeah, 8890.</p> <p>13 A. Yes.</p> <p>14 Q. Okay. Do you see here on here the WMI 15 85-53 is identified as the grade TC-700?</p> <p>16 A. Yes.</p> <p>17 Q. And that's the one we just saw that comes 18 from the San Andreas, California, mine, correct?</p> <p>19 A. Okay. Yes.</p> <p>20 Q. If you look down at WMI 85-56 and 85-57, 21 which are the other two samples, do you see that one is 22 grade 76 and the other is also grade TC-700?</p> <p>23 A. Yes.</p> <p>24 Q. Okay. So for the TC-700, we know that's 25 San Andreas. If you turn back to Tab --</p>

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<p>1 MS. O'DELL: Object to the form. 2 BY MR. FROST: 3 Q. Turn back to Tab 3. 4 MS. O'DELL: Is that a question? 5 MR. FROST: Sure. 6 BY MR. FROST: 7 Q. Do you agree with me that we know from 8 looking at the document before that the TC-700 is 9 identified as San Andreas, California? 10 MS. O'DELL: Object to the form. 11 A. I don't remember. 12 BY MR. FROST: 13 Q. We're going to turn back there. It's Tab 14 3, please, in the binder. It's the last page of that 15 document. 16 A. Right. Oh, okay. Yeah. 17 Q. And do you also see the grade 76? 18 A. 76 is listed there as well. 19 Q. Okay. 20 A. Okay. Yes. 21 Q. So the samples in this, from this testing 22 also did not come from any of the mines utilized by 23 Johnson & Johnson for talcum powder, correct? 24 MS. O'DELL: Object to the form. 25 A. Okay. As far as -- yeah.</p>	<p>1 A. No, not specifically. 2 Q. Okay. If you turn to Tab 7, that's the 3 document, it's identified as JNJMX68_2659. 4 A. JNJMX68_2659. Okay. Where is it in 5 the -- 6 Q. If you look at the third paragraph. 7 A. Okay. 8 Q. So it's the third and the fifth 9 paragraph. 10 A. "The samples represented both the 11 industrial materials produced at the Gassetts and West 12 Windsor." 13 Q. Okay. If you look down at the fifth 14 paragraph, it says, "In one instance, asbestos was 15 identified, this being associated with sample D-GI 16 produced at the Gassetts Mill." 17 A. Okay. 18 Q. And do you agree with me that the 19 Gassetts Mill and industrial talc are different than the 20 cosmetic talcum powder used in Johnson & Johnson Baby 21 Powder -- or Johnson's Baby Powder and Shower to Shower 22 products? 23 A. The geology is related. 24 Q. Okay. But specifically the -- this is 25 not talcum powder that ever made it into a bottle of</p>
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<p>1 BY MR. FROST: 2 Q. Turn to page 19 of your report. 3 A. Page 19 of the report? 4 Q. Yes. The very bottom, the 5 10/10/1974 sample. 6 A. Okay. 7 Q. And if you look at Tab 7, that's the 8 corresponding document. I'm sorry. Tab 6. I 9 apologize. Tab 6 is the corresponding document. 10 A. J&J-74. Okay. 11 Q. Do you see here where it states that the 12 sample that came back, the fibrous asbestiform material 13 is D-GI? It's in the semi-highlighted section, the gray 14 box. 15 A. "Only one sample was found to contain 16 fibrous asbestiform material." 17 Q. And that's D-GI? 18 A. D -- okay. If you say -- all right. 19 Okay. "7/15 to 7/29. Chrysotile fibers were found to 20 be present at an estimated level (good at approximately 21 to an order of magnitude) of .006 percent." 22 Q. And do you know where this sample was 23 mined? 24 A. Not specifically, no. I mean it's -- 25 Q. That -- yeah, I think it's the short --</p>	<p>1 Johnson's Baby Powder or Shower to Shower; is that 2 correct? 3 MS. SCOTT: Objection. 4 A. Presumably, that is correct. 5 BY MR. FROST: 6 Q. Turn to page 15 of your report. 7 A. Page 15? 8 Q. Yep. 9 A. Of the report? Okay. 10 Q. It's the sample 7/7/1971. 11 A. 7/7/1971, J&J-15, Colorado School of 12 Mines, the Vermont talc. 13 Q. And if you turn to Tab 8. This is the 14 corresponding document related to processed talc sample 15 344-L? 16 MS. O'DELL: I'm sorry, Jack. Did you 17 say Tab 8? 18 MR. FROST: Tab 8 of the binder, yes. 19 It's JNJAZ55_6089. 20 MS. O'DELL: Great. Thanks. 21 A. It says, "only minor amounts (below 22 1 percent) of tremolite and actinolite were detected." 23 BY MR. FROST: 24 Q. Okay. And you agree that this is sample 25 344-L that they're talking about?</p>

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<p>1 A. Yeah. It says, "Following are results of 2 the x-ray analyses on the 344-L Vermont talc product and 3 the six monthly Vermont talc product samples." Yes.</p> <p>4 MS. O'DELL: Jack, are you going to 5 mark -- I think what made it to the chart was 6 J&J-15.</p> <p>7 MR. FROST: I didn't have a copy with the 8 J&J-15 sticker on it. It's the same document, 9 though. This is just from our production.</p> <p>10 MS. O'DELL: I see. Do you mind giving 11 me just a minute to pull that up --</p> <p>12 MR. FROST: Sure.</p> <p>13 MS. O'DELL: -- so we can correlate it? 14 It will take me two seconds.</p> <p>15 Thanks very much.</p> <p>16 BY MR. FROST:</p> <p>17 Q. If you turn, sir, to page -- or, sorry, 18 to Tab Number 9. Well, before I get there, this report 19 was done by the Colorado School of Mines, correct?</p> <p>20 A. Colorado School of Mines Research 21 Institute it what it says, yes.</p> <p>22 Q. Are you aware that the Colorado School of 23 Mines issued a subsequent report regarding these 24 samples?</p> <p>25 A. I don't know. I believe I've seen other</p>	<p>1 permissible, but, again, you know, it also indicates 2 that they're sloppy with their materials and they --</p> <p>3 Q. I'll stop you here. Without speculating, 4 you can't tell me that the talc in 344-L contained 5 asbestos, correct?</p> <p>6 MS. SCOTT: Object to the form.</p> <p>7 A. I would say that based on these 8 documents, that, objectively, the analysis might be 9 suspect or based on what I saw previously.</p> <p>10 BY MR. FROST:</p> <p>11 Q. Yeah. But you can't tell me one way or 12 the other based on this, considering it's a retraction?</p> <p>13 A. Well, it was measured once. We don't 14 know -- they didn't -- I don't see any data that backs 15 up --</p> <p>16 Q. Well, there's no data in this report.</p> <p>17 A. It says, I saw where evidently 18 contamination. "Evidently" is a word up to 19 interpretation. Prove it. I don't see, you know, 20 essentially, some sort of chemical analysis or whatever 21 that would prove the exact same thing.</p> <p>22 Q. So with the guy who did the testing 23 saying my testing is wrong, you're still comfortable in 24 saying 100 percent that there was asbestos in that 25 talcum powder sample?</p>
<p>1 things from the Colorado School of Mines.</p> <p>2 Q. Okay. If you turn to Tab 9. It's a 3 document identified as JNJAZ55_3828.</p> <p>4 A. Okay.</p> <p>5 Q. Do you see it where it says -- it's Point 6 Number 1. "In the report of July 7, 1971." Do you 7 agree with me that's the report you just looked at in 8 Tab 8?</p> <p>9 A. Okay.</p> <p>10 Q. Continues down, it says, "Subsequent 11 x-ray work on the six monthly product samples and the 12 344-L product sample shows no definite indications of 13 asbestos-type minerals within our limits of 14 detectability. The trace amounts I saw were evidently 15 contamination from the standard asbestos samples." Did 16 I read that correctly?</p> <p>17 A. You read it correctly. But it's also, in 18 my mind, it's unclear, you know -- you know, again, 19 like, there's no detail as far as, like, the methods and 20 such. So if they're doing this as powders and then 21 they're reanalyzing, so they're repacking the powder at 22 a sample volume can be several cubic centimeters. So 23 it's not necessarily surprising that we would have a 24 positive result and then, if you repack it, you might 25 get a negative result. And their interpretation is</p>	<p>1 MS. SCOTT: Objection.</p> <p>2 A. Well, I would say it's probable --</p> <p>3 BY MR. FROST:</p> <p>4 Q. And what's that based on?</p> <p>5 A. -- or possible.</p> <p>6 Q. What's your basis?</p> <p>7 A. The first finding.</p> <p>8 Q. And the fact that it was negated and 9 specifically retracted by the person who does the 10 testing has absolutely no sway in your mind as to 11 whether or not? You're just now basing your opinion on 12 speculation?</p> <p>13 MS. SCOTT: Objection.</p> <p>14 BY MR. FROST:</p> <p>15 Q. Don't you think the guy who did the test 16 is in a better position than you are today, 40, 50 years 17 later, to say what was in that particular sample that he 18 tested?</p> <p>19 MS. O'DELL: Objection.</p> <p>20 A. I've stated my opinion.</p> <p>21 BY MR. FROST:</p> <p>22 Q. Okay. Interesting one. Let's turn to 23 1972. It's page 16.</p> <p>24 A. There's many from '72 here. Which one?</p> <p>25 Q. It's the very -- it's 8/3/1972.</p>

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<p>1 A. "8/3/1972, J&J-28, NYU, Shower to Shower 2 ... 5 percent chrysotile." 3 Q. Turn to Tab 8. I'm sorry. Tab 10. 4 A. Tab 10. 5 Q. Do you agree this is a corresponding 6 document to that entry? 7 A. J&J-28. Yes. 8 Q. Okay. Real quick, before I get there, 9 turning back to Tab 9, you were never provided with this 10 document, right? 11 MS. SCOTT: Objection. 12 A. Tab 9. I think I was. 13 BY MR. FROST: 14 Q. And then why didn't you consider this 15 document in creating your chart? 16 MS. SCOTT: Objection. 17 A. I potentially missed it in the 18 compilation. 19 BY MR. FROST: 20 Q. And you also didn't include it under 21 materials considered? 22 A. I missed it. 23 Q. Okay. So back to Tab 10. So we agree 24 this is the source of the entry on page 16 of your 25 report, correct? The Shower to Shower sample 84.</p>	<p>1 MS. O'DELL: Give us just a minute. 2 A. Here's one by Doctor -- I'm sorry. I'm 3 getting Dr. Lewin-- okay. D. You said D-1? 4 MS. O'DELL: Is it DX? 5 MR. FROST: I have it as D. It's 6 possible it's DX. 7 A. So let's see what the date is. We have a 8 date. We're looking for January 7th, '76. January 7th, 9 '76. I think there's only -- I have one. I have only 10 one. 11 BY MR. FROST: 12 Q. Sir, we're trying to pull up the 13 documents, but this relates -- and I'll get back -- but 14 this relates to your testing of 8/3/72 by Dr. Lewin. 15 The Shower to Shower sample 84, you note on the 8/3/72. 16 If you look back at Tab 10, that's the corresponding 17 document for that. It's on the one, two, three, four, 18 five, sixth page. 19 MS. SCOTT: Is subsection B on the 20 tabulation of Dr. Lewin's original findings 21 smudged? 22 MR. FROST: Yeah, it's smudged, too. 23 MS. SCOTT: Okay. 24 MR. FROST: Yeah. Mine looks the same. 25 MS. SCOTT: Got it. And that's the</p>
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<p>1 A. Yeah. J&J-28? 2 Q. Yes. 3 A. Yes. 4 Q. Okay. And this was testing that was done 5 by Dr. Lewin? 6 A. Yes. 7 Q. Are you aware that Dr. Lewin retested 8 this sample and was unable to replicate his results? 9 A. No. 10 Q. Okay. Turn to Tab 11. If you look at 11 page 4, it's the testing of Number 29. I think it's 12 four -- three down. 13 A. It is one, two, three, four. And I'm 14 sorry. This is -- 15 Q. Yes. That's the chart. 16 A. Where? I don't see a number on this. 17 Q. Yeah. It appears to have gotten cut off, 18 so I don't know what the number of this document is. We 19 can sort that out at the back end. 20 A. Where is it at on the chart? 21 Q. It's D-7113. As I said, it got cut off. 22 MS. O'DELL: Yeah. Was it marked in a 23 deposition? 24 MR. FROST: I believe it is. It's marked 25 somewhere, but I have it in my notes as D-7113.</p>	<p>1 original? 2 MR. FROST: Yes. My understanding is 3 that's the original. 4 BY MR. FROST: 5 Q. Okay. So you see we're talking about 6 Sample 84 on Tab 10? 7 A. Right. So I'm at Tab 10. Tab 10. 8 Q. One, two, three, four -- it's the fifth 9 page. 10 A. One, two, three, four, five. 11 Q. Do you see a Product 84? 12 A. Product 84? Yes. 13 Q. And if you follow across, there's -- 14 A. 5 percent chrysotile. 15 Q. -- 5 percent chrysotile. Okay. So if 16 you turn to the document at Tab 11. 17 MS. O'DELL: I'm not able to find that 18 DX. 19 MR. FROST: Okay. Well, I'll provide it 20 to you after the deposition. We'll figure it 21 out. 22 BY MR. FROST: 23 Q. So if you look at this, this document, 24 you go to the fourth page. Sorry. One, two, three, 25 fourth page.</p>

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<p>1 A Okay. One, two, three, four.</p> <p>2 Q. Do you see here under Sample 84 with the</p> <p>3 retest that there's a no detect and there's no finding</p> <p>4 of chrysotile?</p> <p>5 MS. SCOTT: Objection.</p> <p>6 A. In the -- oh, there's a question mark for</p> <p>7 chrysotile, right?</p> <p>8 BY MR. FROST:</p> <p>9 Q. Yeah. It certainly doesn't find that</p> <p>10 there's chrysotile in the retest, correct?</p> <p>11 MS. SCOTT: Objection.</p> <p>12 A. It doesn't say "no detect," also.</p> <p>13 BY MR. FROST:</p> <p>14 Q. Again, without speculating, can you tell</p> <p>15 me whether or not that that means there's chrysotile in</p> <p>16 that product?</p> <p>17 A. No. But it means there's some question.</p> <p>18 Yeah, I don't know why they would use question marks.</p> <p>19 If it was no detect, I would expect it to be an ND.</p> <p>20 Q. But, again, you can't tell me one way or</p> <p>21 the other without speculating that there's chrysotile in</p> <p>22 that product, correct?</p> <p>23 MS. O'DELL: Object to the form.</p> <p>24 A. So with all these, you know, re-analyses,</p> <p>25 you know, essentially, one aspect of variability is that</p>	<p>1 Powder, 3 percent chrysotile.</p> <p>2 Q. You're looking at page 4 of 7?</p> <p>3 A. 4 of 7.</p> <p>4 Q. Samples 183 and 184?</p> <p>5 A. Yes.</p> <p>6 Q. If you look back at Tab 11. If you look</p> <p>7 at Samples 133 and 134 here. Again, on the retest, this</p> <p>8 time there's no question mark. It says nondetect for</p> <p>9 chrysotile, tremolite. Do you agree?</p> <p>10 A. 133 and 134, ND. Yes, ND is listed.</p> <p>11 Q. And if you look back at your chart on</p> <p>12 16 -- strike that.</p> <p>13 So, again, looking at this, you can't</p> <p>14 tell me whether or not there's actually asbestos that</p> <p>15 made it into the sample that's listed as 9/26/72 in your</p> <p>16 chart, correct, without speculating?</p> <p>17 A. Correct. It was detected once in a</p> <p>18 sample, and it was not detected again in what is</p> <p>19 supposedly the same sample. So I'm unclear. Is it the</p> <p>20 exact -- is it the same exact sample or same lot?</p> <p>21 Q. It's the same sample, sir. It was</p> <p>22 retesting of the same sample.</p> <p>23 A. Resting.</p> <p>24 MS. O'DELL: Object to the form.</p> <p>25 A. Is the exact --</p>
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<p>1 perhaps the samples were either ground more or not</p> <p>2 prepared, you know, in the same way.</p> <p>3 BY MR. FROST:</p> <p>4 Q. Let's stop you here. You're speculating</p> <p>5 about all of this, correct? Based on these documents,</p> <p>6 can you tell me one way or the other that there was any</p> <p>7 problems with the retest or that they've actually found</p> <p>8 chrysotile in any of these samples? I don't want you to</p> <p>9 speculate.</p> <p>10 MS. SCOTT: Object to the form.</p> <p>11 A. The -- this has a question mark listed</p> <p>12 for chrysotile.</p> <p>13 BY MR. FROST:</p> <p>14 Q. And based on that, you can't tell me one</p> <p>15 way or the other whether there was chrysotile in the</p> <p>16 final sample that was tested, according to this</p> <p>17 document, correct?</p> <p>18 A. Correct. According to that document.</p> <p>19 Q. Okay. Go to your chart. Still on page</p> <p>20 16, I believe. It's 9/26/72.</p> <p>21 A. 9/26/72.</p> <p>22 Q. If you turn to Tab 12. Do you agree that</p> <p>23 that's the corresponding document, J&J-31?</p> <p>24 A. JNJ-31. I believe so, yes. Johnson's</p> <p>25 Baby Powder, 2 percent chrysotile; Johnson's Baby</p>	<p>1 MS. O'DELL: Excuse me. Object to the</p> <p>2 form.</p> <p>3 BY MR. FROST:</p> <p>4 Q. You can read the document yourself, sir.</p> <p>5 All right. So I think we've gone</p> <p>6 through, like, six of these, correct? And we've come up</p> <p>7 with six of them either are samples that have absolutely</p> <p>8 nothing to do with Johnson's Baby Powder or Shower</p> <p>9 or any other cosmetic talcum problem. Do you</p> <p>10 agree? Talcum powder product.</p> <p>11 MS. O'DELL: Objection.</p> <p>12 BY MR. FROST:</p> <p>13 Q. Do you agree?</p> <p>14 A. We've gone through six examples as</p> <p>15 you've -- yeah.</p> <p>16 Q. And others we've come up with, we</p> <p>17 basically determined without speculating you can't say</p> <p>18 one way or the other that there is asbestos in that</p> <p>19 product that made it onto the market, correct?</p> <p>20 MS. SCOTT: Object to the form.</p> <p>21 A. Based on those documents, yes.</p> <p>22 BY MR. FROST:</p> <p>23 Q. So I think it would take us days to go</p> <p>24 through all of these, but can you definitively sit here</p> <p>25 now and tell me that every single hit or every single</p>

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<p>1 reference you have on this list showing asbestos and 2 talcum powder is actually talcum powder that was, one, 3 either use or ended up in a bottle of Johnson's Baby 4 Powder or Shower to Shower or other talcum powder 5 products or, two, that you can say without speculating 6 contains asbestos?</p> <p>7 MS. O'DELL: Objection.</p> <p>8 A. To the best of my knowledge, I stand by 9 the report.</p> <p>10 BY MR. FROST:</p> <p>11 Q. But sitting here today, you can't tell me 12 one way or the other that absolutely every -- well, we 13 know not every single entry is correct?</p> <p>14 MS. O'DELL: Objection.</p> <p>15 A. Yeah. So there -- there are some 16 misidentifications or later corrections, later 17 corrections that I was unaware of, but it's also 18 concerning that you can -- it's not exactly -- you know, 19 so what is a sample? It's not exactly clear if the 20 sample is like a kilogram sample, so you could have 21 portions in that sample that have asbestos that you 22 cannot detect, and then you can have regions of the 23 sample that have a lot. So that, that's my opinion.</p> <p>24 Q. So what you're telling me is you can't 25 actually speculate as to any of the testing results in</p>	<p>1 they provided to you?</p> <p>2 MS. SCOTT: Objection.</p> <p>3 A. No. But I -- well, I remember there's a 4 deposition by Blount who indicated, I think, on page 10 5 that work from 1991 was Johnson & Johnson talcum powder, 6 if I remember correctly. I've seen that somewhere.</p> <p>7 BY MR. FROST:</p> <p>8 Q. Okay. So Blount, Longo. And, again, 9 Blount was provided to you by plaintiffs' counsel, 10 correct?</p> <p>11 A. Yes.</p> <p>12 Q. Now, you've done no additional testing 13 yourself of talcum powder? I think you said that 14 before.</p> <p>15 A. Correct. Yeah. That was not requested 16 of me.</p> <p>17 Q. And have you done any testing or cusing 18 of the testing done by Dr. Longo?</p> <p>19 MS. SCOTT: Objection. Asked and 20 answered.</p> <p>21 A. No. I was not asked to retest on any of 22 his samples or anything like that.</p> <p>23 BY MR. FROST:</p> <p>24 Q. So you're merely relying on the results 25 of his testing for purposes of your opinions here,</p>
<p>1 here because of the various sample sizes retesting, and 2 again, not everything we found is a retest, right? Some 3 aren't even products of cosmetic talc, correct?</p> <p>4 MS. O'DELL: Object to the form.</p> <p>5 MS. SCOTT: Objection.</p> <p>6 A. I don't remember.</p> <p>7 BY MR. FROST:</p> <p>8 Q. You don't remember that we found talcum 9 powder that came from a mine in San Andreas, California?</p> <p>10 A. I'm sorry. Yeah, that's correct.</p> <p>11 Q. Okay. So it's not just retesting that 12 came back. I've also identified some product that has 13 nothing to do with cosmetic talcum powder, correct?</p> <p>14 MS. SCOTT: Objection.</p> <p>15 A. Correct.</p> <p>16 BY MR. FROST:</p> <p>17 Q. Okay. Now, you also reference in your 18 report Dr. Longo's reports; is that correct?</p> <p>19 A. Yes.</p> <p>20 Q. And I take it you were provided those 21 reports by plaintiffs' counsel?</p> <p>22 A. Yes.</p> <p>23 Q. Did you ever ask plaintiffs' counsel if 24 anybody else has done testing of Johnson & Johnson 25 talcum powder other than Dr. Longo and the records that</p>	<p>1 correct?</p> <p>2 A. Yes.</p> <p>3 Q. You have no opinions about his sample 4 preparation, his underlying testing methods, anything of 5 that nature?</p> <p>6 A. I'm fine with what he's done.</p> <p>7 Q. Okay. But you're not rendering any 8 opinions that it's correct or incorrect or the 9 methodology about it? You're not going to sit here 10 today and walk me through the methodology that Longo 11 used to give me opinions that that's the proper way or 12 not the proper way?</p> <p>13 MS. SCOTT: Objection.</p> <p>14 A. I think what he did was fine for the 15 purpose of the report.</p> <p>16 BY MR. FROST:</p> <p>17 Q. You have no problems with any of the 18 methodology he employed in his testing?</p> <p>19 MS. O'DELL: Objection. Asked and 20 answered.</p> <p>21 A. No. I'm fine with what he's done in the 22 report.</p> <p>23 BY MR. FROST:</p> <p>24 Q. This is despite the fact that you've done 25 nothing to verify the results of his report?</p>

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<p>1 MS. SCOTT: Objection.</p> <p>2 A. You know, I looked at a lot of TEM data.</p> <p>3 You know, just looking at the quality of the data,</p> <p>4 electron diffraction is, requires a certain level of</p> <p>5 skill, and he produced several, you know, really good</p> <p>6 nets, so he was obviously able to get good orientations</p> <p>7 of crystals. So, you know, he didn't have anything that</p> <p>8 was extremely off axis or anything like that. So at</p> <p>9 that level, I mean, I am fine with his data.</p> <p>10 BY MR. FROST:</p> <p>11 Q. You didn't go through and actually run</p> <p>12 any calculations to determine whether or not his</p> <p>13 accessees were correct or whether or not any of his</p> <p>14 underlying calculations or determinations are correct?</p> <p>15 MS. SCOTT: Objection. Asked and</p> <p>16 answered.</p> <p>17 A. I did not index things, but the</p> <p>18 diffraction patterns looked suitable and consistent as</p> <p>19 to the EDS, suitable and consistent with the materials</p> <p>20 that he identified.</p> <p>21 BY MR. FROST:</p> <p>22 Q. And is suitable and consistent the</p> <p>23 scientific requirement for testing?</p> <p>24 MS. SCOTT: Objection.</p> <p>25 A. So with TEM work, essentially, one should</p>	<p>1 found asbestos in every sample he tested?</p> <p>2 A. I would not be comfortable saying that.</p> <p>3 I don't know.</p> <p>4 Q. Okay.</p> <p>5 A. I know he found asbestos in many samples.</p> <p>6 Q. Okay. Turning to -- where I did put your</p> <p>7 report?</p> <p>8 THE WITNESS: Can we take a little break?</p> <p>9 MR. FROST: Sure.</p> <p>10 VIDEOGRAPHER: We're now going off</p> <p>11 record. The time is 5:47.</p> <p>12 (A recess was taken from 5:47 to 6:00.)</p> <p>13 VIDEOGRAPHER: We are back on record, and</p> <p>14 the time is 6:00.</p> <p>15 BY MR. FROST:</p> <p>16 Q. We're going to change gears a little bit</p> <p>17 and talk about fibrous talc. Of course, I'm not finding</p> <p>18 it. That's all right. It doesn't matter.</p> <p>19 So, in general, you're relying on the</p> <p>20 IARC statement from 2012, correct, that fibrous talc is</p> <p>21 carcinogenic?</p> <p>22 A. I'm just trying to find it.</p> <p>23 BY MR. FROST:</p> <p>24 Q. If you find it, tell me the page. Okay.</p> <p>25 Page 23 is where it starts.</p>
<p>1 have an image, an EDS pattern and a diffraction pattern.</p> <p>2 So I find what he has done is in agreement with what I</p> <p>3 would do and what others have done.</p> <p>4 BY MR. FROST:</p> <p>5 Q. This is despite the fact that you didn't</p> <p>6 do any retesting of the work calculations. You didn't</p> <p>7 do any cusing of it. You're just taking it a face value</p> <p>8 based on your review?</p> <p>9 MS. SCOTT: Objection.</p> <p>10 A. I was not tasked with retesting samples.</p> <p>11 BY MR. FROST:</p> <p>12 Q. You agree with me that there are samples</p> <p>13 where Dr. Longo detected no asbestos, correct?</p> <p>14 A. I'm not sure. There may have been some,</p> <p>15 but I don't remember the exact details.</p> <p>16 Q. So you're relying on Dr. Longo's report</p> <p>17 and testing as a basis for your opinions here, but you</p> <p>18 can't even tell me whether or not what percentage or if</p> <p>19 he finds no asbestos in some of the bottles he tested?</p> <p>20 MS. SCOTT: Objection.</p> <p>21 A. There were, you know, hundreds and</p> <p>22 hundreds of images diffraction patterns in EDS, so I</p> <p>23 don't remember specifics.</p> <p>24 BY MR. FROST:</p> <p>25 Q. So you can't tell me whether or not he</p>	<p>1 A. Twenty-three.</p> <p>2 Q. In general, I think a couple different</p> <p>3 places in your report, you note that, according to IARC,</p> <p>4 it's actually -- I see it on page 3. Yeah, that rely on</p> <p>5 IARC 2012 to state that fibrous talc can be a human</p> <p>6 carcinogen?</p> <p>7 A. I'm sorry. You said page 3?</p> <p>8 Q. Yes.</p> <p>9 A. Page 3.</p> <p>10 MS. SCOTT: I'll just object.</p> <p>11 A. "Talc can occur in a fibrous habit"?</p> <p>12 Q. Yep.</p> <p>13 A. "These fibers can be inhaled into the</p> <p>14 lower lungs based on their length and diameter,</p> <p>15 producing effects linked to significant health risks in</p> <p>16 humans. IARC 2012."</p> <p>17 BY MR. FROST:</p> <p>18 Q. Okay. Would you agree with me that</p> <p>19 you're not an expert in reading the literature of what</p> <p>20 causes cancer?</p> <p>21 MS. SCOTT: Objection.</p> <p>22 A. I am not an oncologist. I am not a</p> <p>23 medical expert.</p> <p>24 BY MR. FROST:</p> <p>25 Q. Do you agree with me that an IARC</p>

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<p>1 monograph does not represent independent lab work but, 2 instead, it's a summary of work that's already been done 3 by others?</p> <p>4 MS. SCOTT: Objection.</p> <p>5 A. And that's normal. There are many 6 monographs. I mean, we have, you know, the CRC 7 chemistry book.</p> <p>8 BY MR. FROST:</p> <p>9 Q. That's what I'm saying.</p> <p>10 A. It is a cumulative document, as I 11 understand it, based on peer-review literature, and it's 12 also an international document, so it's global 13 peer-review literature, as I understand it.</p> <p>14 Q. Do you agree with me that if there are -- 15 IARC does not draw conclusions on its own, so if there's 16 not peer-reviewed literature that says one way or the 17 other, IARC isn't going to jump out and say this is or 18 this isn't, correct? IARC relies on the work of others 19 in order to reach its conclusions?</p> <p>20 MS. O'DELL: Object to form.</p> <p>21 A. I think it's speculation because I'm not 22 an expert in health and medical things.</p> <p>23 BY MR. FROST:</p> <p>24 Q. Okay. Are you aware whether or not there 25 are any peer-reviewed studies that actually link</p>	<p>1 BY MR. FROST:</p> <p>2 Q. If you want me to explain it --</p> <p>3 A. I don't -- I don't remember.</p> <p>4 Q. And that, specifically, the theory is 5 that -- you know, the explanation is that if you look at 6 talc edge on, it can appear in a 2-D image as fibrous. 7 Would you agree with that?</p> <p>8 MS. SCOTT: Objection.</p> <p>9 A. Can I make a statement?</p> <p>10 BY MR. FROST:</p> <p>11 Q. Sure.</p> <p>12 A. So the miopyroboles are this mineral 13 group that actually were discovered in the ultramafic, 14 these talc-rich zones in Vermont. So Dave Devlin, I 15 worked with Thompson at Harvard, and basically, what 16 they showed is that you can have these structural 17 intermediates where, essentially, you can have a region 18 of a crystal.</p> <p>19 Q. Okay. I am going to stop you because we 20 are talking about something completely different. My 21 question was --</p> <p>22 A. I was explaining how one might get 23 fibrous talc.</p> <p>24 Q. No, no. I'm talking about -- that's why 25 I stopped you, because that's not what we're talking</p>
<p>1 exposure to talc to ovarian cancer?</p> <p>2 MS. SCOTT: Objection.</p> <p>3 MS. O'DELL: Object to form.</p> <p>4 A. I'm sorry. Any studies or any 5 information?</p> <p>6 BY MR. FROST:</p> <p>7 Q. I said any peer-reviewed studies linking 8 exposure to talc to ovarian cancer.</p> <p>9 A. I'm not a medical expert.</p> <p>10 Q. Again, can you tell me whether or not 11 IARC specifically links exposure to talc to ovarian 12 cancer?</p> <p>13 MS. SCOTT: Objection. Asked and 14 answered.</p> <p>15 MS. O'DELL: Objection.</p> <p>16 A. I'm not a medical expert.</p> <p>17 BY MR. FROST:</p> <p>18 Q. Have you ever done any work identifying 19 talc as either platy or fibrous?</p> <p>20 A. No. I have no peer-reviewed articles.</p> <p>21 Q. Are you aware if you ever heard of the 22 common misreporting of platy talc as fibrous?</p> <p>23 MS. SCOTT: Objection.</p> <p>24 MS. O'DELL: Objection.</p>	<p>1 about.</p> <p>2 So do you agree that if you're looking at 3 a plate of talc on edge, it can appear as a fiber in a 4 2-D SEM or TEM image? And have you read any literature 5 about the problems with misidentifying talc?</p> <p>6 MS. O'DELL: Objection.</p> <p>7 MS. SCOTT: Objection.</p> <p>8 A. It can look -- so a fibrous -- a fiber 9 can look like a two-dimensional plate or a 10 two-dimensional plate can look like a fiber.</p> <p>11 BY MR. FROST:</p> <p>12 Q. So the problem is when you're looking -- 13 because, usually, a platy talc, you know, if it's 14 sitting oriented this way, you can see the large 15 flatness of it, but if it's oriented that you're 16 looking at the flat plane, have you ever read anything 17 that talks about the fact that you can misidentify platy 18 talc as fiber based on the orientation of the image?</p> <p>19 MS. SCOTT: Objection.</p> <p>20 A. I don't remember.</p> <p>21 MR. FROST: Can we get IARC 2010? I 22 forget what that was marked as. It's the big 23 orange one, I believe. Yeah, there it is.</p> <p>24 MS. O'DELL: Five.</p> <p>25 MR. FROST: It looks like that. It's</p>

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<p>1 five.</p> <p>2 BY MR. FROST:</p> <p>3 Q. I'll skip this. You said you haven't 4 read anything. You don't know about that, so it's not 5 something that comes up in your work?</p> <p>6 A. I don't remember.</p> <p>7 Q. That's fine. I'll move on for sake of 8 time. All right.</p> <p>9 Now, you've also noted in your report 10 various opinions about findings of nickel, chromium and 11 cobalt, correct?</p> <p>12 A. Yes.</p> <p>13 Q. And you're not qualified to opine as to 14 whether or not a particular level of nickel is 15 sufficient to cause human disease, correct?</p> <p>16 MS. SCOTT: Objection.</p> <p>17 A. I am not a toxicologist.</p> <p>18 BY MR. FROST:</p> <p>19 Q. You're also not qualified to opine what, 20 if any, disease may be associated with nickel 21 contaminated or with nickel exposure, correct?</p> <p>22 MS. SCOTT: Objection.</p> <p>23 A. I'm not a toxicologist or oncologist.</p> <p>24 BY MR. FROST:</p> <p>25 Q. I'm looking at your report, starting on</p>	<p>1 finished talcum powder, correct?</p> <p>2 MS. SCOTT: Objection.</p> <p>3 MS. O'DELL: Objection.</p> <p>4 A. I'm sorry. Repeat the question.</p> <p>5 BY MR. FROST:</p> <p>6 Q. Sure. You can't tell me without 7 speculating that levels of -- we're looking at nickel, 8 for example, here, found in ore samples are the same 9 levels that would be located in finished talcum powder, 10 correct?</p> <p>11 MS. SCOTT: Objection.</p> <p>12 A. Correct. The levels of metals may be the 13 same, may be less or may be more depending upon the 14 process.</p> <p>15 BY MR. FROST:</p> <p>16 Q. And things like beneficiation, blending, 17 things of this nature would ultimately affect what ends 18 up in the final product, right?</p> <p>19 A. If it's executed correctly, but I think 20 it's also reasonable to say that some -- it is 21 scientifically likely -- it's my opinion that some of 22 this would, from the ore samples, would make it into 23 product if it is used for that purpose.</p> <p>24 Q. But you can't tell me, of these ore 25 samples, what sample may or may not have made --</p>
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<p>1 page 34.</p> <p>2 A. I'm right there.</p> <p>3 Q. Some of these tests, you'll agree with 4 me, you know, not that they're from ore. Several of 5 them actually note that they're from ore grade 66. 6 Windsor 66, you agree, is an ore, correct?</p> <p>7 MS. O'DELL: Object to the form.</p> <p>8 A. I'm sorry?</p> <p>9 BY MR. FROST:</p> <p>10 Q. You'd agree with me, looking at these, 11 that the marks that say "ore in concentrate, grade 66, 12 Windsor 66," et cetera, these are all ore samples, 13 correct?</p> <p>14 MS. SCOTT: Objection.</p> <p>15 A. I think so. I'd like to look at the 16 document to be sure.</p> <p>17 BY MR. FROST:</p> <p>18 Q. I mean, you can go on them, such as the 19 example of Imerys 045182. It says three ore samples?</p> <p>20 A. Yeah. So that's what it's listed as, 21 yes.</p> <p>22 Q. So you'd agree with me without 23 speculating, you can't say one way or the other that 24 levels, as detected in the ore samples, are actually the 25 levels that may have ever made it into a bottle of</p>	<p>1 A. I can't tell you where, what bottle that 2 might have ended up in, yes.</p> <p>3 Q. Or if it even could have ended up in the 4 bottle, correct?</p> <p>5 MS. SCOTT: Objection.</p> <p>6 BY MR. FROST:</p> <p>7 Q. At that --</p> <p>8 A. Specifically, no.</p> <p>9 Q. Okay.</p> <p>10 A. If you process it, you may modify it one 11 way or the other.</p> <p>12 Q. The same thing would also be true with 13 respect to the chromium, cobalt, and I think this is the 14 only other ones, right, chromium, cobalt that are listed 15 in the charts? Yes.</p> <p>16 MS. SCOTT: Objection.</p> <p>17 BY MR. FROST:</p> <p>18 Q. The same would be true with chromium and 19 cobalt, right?</p> <p>20 A. Chromium, cobalt, nickel. Chromium 21 cobalt, nickel -- I'm just checking and double checking. 22 Chromium, cobalt, and then it's not in chart form, but I 23 do talk about arsenic on page 33.</p> <p>24 Q. And it would be the same for the 25 chromium, cobalt, nickel and arsenic based on ore sample</p>

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<p>1 testing? You couldn't say one way or the other what 2 level ultimately made it into, if at all, talcum powder, 3 finished talcum powder, correct?</p> <p>4 MS. SCOTT: Objection.</p> <p>5 A. Yes.</p> <p>6 BY MR. FROST:</p> <p>7 Q. With respect to chromium, which is page 8 36 of your report, sir?</p> <p>9 A. Uh-huh.</p> <p>10 Q. You know that chromium can occur in two 11 different forms, Chromium III and Chromium VI?</p> <p>12 A. It's a slight typo. What I mean to say 13 there is chromium can occur in two common forms and 14 minerals, Chromium III and Chromium IV. So chromium can 15 actually have several different valent states to it --</p> <p>16 Q. And it's Chromium VI --</p> <p>17 A. -- including the zero valent metal, which 18 we don't really see in nature.</p> <p>19 Q. And it's chromium 6, correct, that is the 20 known carcinogen?</p> <p>21 A. Yeah. That is one of high concern, as I 22 understand it.</p> <p>23 Q. Are you generally aware that Chromium III 24 is actually an essential element in the human body?</p> <p>25 A. I'm a diabetic. Yes.</p>	<p>1 Q. It you turn to, I believe, Exhibit 2, 2 your supplemental report.</p> <p>3 A. Okay.</p> <p>4 Q. Okay. The second page.</p> <p>5 A. Okay.</p> <p>6 Q. Under sampling and techniques, do you see 7 it's one, two, three, four down?</p> <p>8 A. Under "Sampling and Testing"?</p> <p>9 Q. Under "Sampling and Testing Results," 10 yes. You know that it failed to provide data 11 supporting -- no. I'm in the wrong place.</p> <p>12 A. I'm sorry. Where were you?</p> <p>13 Q. Sorry. I was in the wrong place. Bear 14 with me a second here. Okay. It's the one, two, third 15 paragraph down. It starts with "Another issue."</p> <p>16 A. Yeah.</p> <p>17 Q. So "Another issue was the vague 18 description of the preparation technique. The method 19 fails to identify whether the material was ground, 20 crushed or made into a powder by another method." Do 21 you see that there?</p> <p>22 A. Yes.</p> <p>23 Q. If you look up to the testing, it says, 24 "XRD methodology states." Do you see where I am there?</p> <p>25 A. Yes.</p>
<p style="text-align: center;">Page 279</p> <p>1 Q. Okay. And are you also aware that 2 chromium 3 is commonly found in rocks and minerals?</p> <p>3 A. Yes.</p> <p>4 Q. And, again, in looking at the chart, you 5 don't list here whether or not it is Chromium III, 6 Chromium VI or some other variant of the mineral -- or 7 the metal, correct?</p> <p>8 A. Correct. But I think it's reasonable 9 that -- yes. There's no specific determination of 10 valent state, which would have been a nice step if you 11 could definitively show that there is no chromium or 12 active valent chromium that would have been a good 13 thing. But, yes, there's no specific EELS, electron 14 energy loss spectroscopy, or what comes through 15 techniques to determine that.</p> <p>16 Q. And with respect to the arsenic, the 17 cobalt and the chromium, just like the nickel, you can't 18 tell me what level of exposure is required to cause 19 disease of those heavy metals, correct?</p> <p>20 A. I am not a medical or oncologist, sir, 21 yes.</p> <p>22 Q. And it's the same thing. You couldn't 23 tell me what diseases they're known to cause if you have 24 exposure, correct?</p> <p>25 A. Correct.</p>	<p style="text-align: center;">Page 281</p> <p>1 Q. It's the part that's indented.</p> <p>2 Underneath, it says, "Monthly talc composite, February 3 1990."</p> <p>4 A. Yeah.</p> <p>5 Q. Do you agree with me that the monthly 6 talc composite is a composite of the ground finished 7 talc that's being tested?</p> <p>8 MS. SCOTT: Objection.</p> <p>9 A. I'm unsure. I'm unsure. The -- you -- 10 one would essentially prepare the -- I'm sorry. Go 11 ahead.</p> <p>12 BY MR. FROST:</p> <p>13 Q. Yes.</p> <p>14 A. I'm unsure.</p> <p>15 Q. You can't tell me whether or not this was 16 the composite sample of the already ground and prepared 17 talc?</p> <p>18 A. I don't -- I don't remember specifically.</p> <p>19 Q. And if the talc was already ground as a 20 finished product, there wouldn't be further grinding of 21 it. Do you agree with that?</p> <p>22 MS. SCOTT: Objection.</p> <p>23 A. So as I understand, the final talc 24 particle size is approximately 15, 25 microns or so, so 25 that's essentially fine salt size. So, typically, in</p>

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<p>1 power diffraction, you would want to reduce that 2 particle size further. 3 BY MR. FROST: 4 Q. Did you see anywhere in reviewing this 5 testing that they state that they reduce the particle 6 size further? 7 MS. O'DELL: If you need to review the 8 document, Doctor, we can pull it. 9 A. Yeah. Why don't we pull it up? 10 BY MR. FROST: 11 Q. Sure. I don't have it. That's fine. We 12 can move on. I don't want to waste my time. 13 MS. O'DELL: To ask him questions, 14 specific questions about the document not having 15 this. 16 MR. FROST: I'm just asking -- I'm just 17 asking if he knows and what he remembers in 18 drafting his report. 19 All right, sir. I think that's all the 20 questions I have for now. I reserve the right 21 to look at my notes and come back, but I'm going 22 to yield my time to some of the other 23 defendants. We can go off the record. 24 VIDEOGRAPHER: We're now going off 25 record. The time is 6:19.</p>	<p>1 A. Yes. 2 Q. And you've published a hundred and 3 something; is that right? 4 A. Over 40 peer-review papers. I have over 5 a hundred presentations at meetings and a couple 6 patents, yes. 7 Q. In your peer-review papers, when you're 8 citing authorities in your peer-review papers, you tend 9 to or customarily cite peer-reviewed papers, don't you? 10 A. Generally, yes. 11 Q. Because you know that they have the 12 likelihood to be more accurate and have been, obviously, 13 reviewed by peers, correct? 14 MS. O'DELL: Object to form. 15 A. Correct, yes. 16 BY MR. FERGUSON: 17 Q. Now, in your report that you did in this 18 case, and I know it's been marked as an exhibit. I 19 forget which number. In your report in this case, you 20 have, among other authorities, cited Dr. Longo and 21 Dr. Rigler's report, correct? 22 A. I've cited expert witness reports, yes. 23 Q. And you understand that Dr. Longo and 24 Rigler's report, that's not peer reviewed, correct? You 25 understand that?</p>
<p>1 (A recess was taken from 6:19 to 6:33.) 2 VIDEOGRAPHER: We are now back on record 3 and the time is 6:33. 4 CROSS-EXAMINATION 5 BY MR. FERGUSON: 6 Q. Good evening, Dr. Krekeler. How are you? 7 A. Good. 8 Q. Okay. We met briefly before. My name is 9 Ken Ferguson, and I represent Imerys. Do you understand 10 that? 11 A. Yes. 12 Q. Okay. And I've got, along with Mr. Cary, 13 who's down, three people down from me. 14 A. Okay. 15 Q. I've got some questions for you. I'm not 16 going to spend a lot of time, because there's not a lot 17 of time left, so I may skip around a little, just 18 depending on which questions I feel like I need to get 19 asked before I run out of time. So I'm not trying to 20 confuse you by that, but if I do, then you let me know, 21 and I'll restate the question, okay? 22 A. Okay. 23 Q. Okay. Fair enough. 24 So in your career as an academic, you've 25 written scientific papers before, correct?</p>	<p>1 A. Yes, I do. 2 Q. So while your custom is to cite 3 peer-reviewed articles in your scientific papers that 4 you're writing, you've varied from that in doing your 5 report here in this matter, correct? 6 MS. O'DELL: Object to the form. 7 A. Yes. So I have not in my previous work 8 cited an expert witness report. 9 BY MR. FERGUSON: 10 Q. And you understand that Dr. Longo and his 11 colleague, Dr. Rigler, and I think they wrote these 12 reports together, that they are being paid as experts by 13 counsel for plaintiffs just as you are, correct? 14 MS. SCOTT: Objection. 15 A. I believe that is the case, yes. 16 BY MR. FERGUSON: 17 Q. I want to talk to you a little bit about 18 a book that I see you've got your copy out. I've got my 19 copy out, and we have some copies we've made that I'm 20 going to mark as Exhibit 23, I believe. 21 (Exhibit 23 was marked for 22 identification.) 23 BY MR. FERGUSON: 24 Q. Now what I've marked, Dr. Krekeler, are 25 some pages from a book called "An Introduction to the</p>

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<p>1 Rock-Forming Minerals" by Deer, Howie and Zussman, 2 correct?</p> <p>3 A. Is this the same edition?</p> <p>4 Q. I believe -- I believe it's the third 5 edition.</p> <p>6 A. Oh, I'm sorry.</p> <p>7 Q. And yours is?</p> <p>8 A. Third. Yeah, we're good.</p> <p>9 Q. This is a book that is often relied upon 10 by mineralogists, correct, material scientists?</p> <p>11 A. This is a book that is used as a textbook 12 for mineralogy courses, yes.</p> <p>13 Q. So let's go back to your report, and if 14 you would, just keep the Deer, Howie and Zussman by your 15 side. Go to your report at page 5. Are you with me?</p> <p>16 A. Page 5.</p> <p>17 Q. And in the first paragraph on page 5 of 18 your report, there's a sentence in the middle that says, 19 "As a result, natural talc formation is commonly 20 accompanied by veins of other minerals, including 21 asbestos minerals like tremolite and serpentine," 22 correct?</p> <p>23 A. Yes.</p> <p>24 Q. And you cite for that Deer, Howie & 25 Zussman 2013, correct?</p>	<p>1 (Exhibit 24 was marked for 2 identification.)</p> <p>3 BY MR. FERGUSON:</p> <p>4 Q. And this is a paper by Harold R. 5 Newman, correct?</p> <p>6 A. That's what it says.</p> <p>7 Q. And it says, "The Mineral Industry of 8 Italy," correct?</p> <p>9 A. Yes. What journal did this come from?</p> <p>10 Is this peer review?</p> <p>11 Q. I don't know. I believe it is, but I 12 don't know the answer, so I'm not going to answer it.</p> <p>13 A. You believe or it is?</p> <p>14 Q. I get to ask the questions.</p> <p>15 A. All right.</p> <p>16 Q. We have Harold Newman's paper here, okay?</p> <p>17 A. Okay.</p> <p>18 Q. From The Mineral Institute of Italy, 19 right?</p> <p>20 A. Mineral Industry of Italy, one.</p> <p>21 Q. So look at page --</p> <p>22 A. I'm sorry?</p> <p>23 Q. Look at page 428, please.</p> <p>24 A. 428?</p> <p>25 Q. Yes. And you see on the right-hand</p>
<p>1 A. Yep.</p> <p>2 Q. And the citation down below cites, for 3 that assertion, pages 145, 149, 151 and 164 to 165, 4 correct?</p> <p>5 A. Yes. That's what it reads.</p> <p>6 Q. And it's your contention in your expert 7 report that those pages stand for the proposition that 8 we just read the "natural talc formation is commonly 9 accompanied by veins of other minerals, including 10 asbestos minerals like tremolite and serpentine," 11 correct?</p> <p>12 A. Yes.</p> <p>13 Q. Let's move on because I'm not sure I have 14 it time to sit and read them all now. Let's move on to 15 another topic. Let's look at page 9 of your report, 16 please.</p> <p>17 A. Page 9?</p> <p>18 Q. Page 9, sir, yes. And do you see on page 19 9 that you have said in the -- I think it's the second 20 full paragraph. "Based on what I have reviewed, I have 21 sufficient basis to conclude that Italian ore was of 22 poor quality," correct?</p> <p>23 A. Yes.</p> <p>24 Q. And let me show you, first of all, an 25 exhibit that we'll mark as Exhibit 24.</p>	<p>1 column, this is a paragraph that has "Talc" in bold at 2 the beginning of the paragraph, correct?</p> <p>3 A. Correct.</p> <p>4 Q. And it says -- and I won't try to 5 pronounce the Italian names. We had enough trouble with 6 Chinese names earlier on, but "Talco" -- I'll try -- "e 7 Grafite Val Chisone S.p.A. operated two underground 8 mines at Pinerolo near Turin," correct?</p> <p>9 A. That is what it says. I didn't know.</p> <p>10 Q. And next sentence says, "The white talc, 11 mined from metamorphic rocks, has been of very high 12 quality," correct?</p> <p>13 A. That is what it says. It doesn't say 14 what high quality for. Is it -- the table in the back, 15 does it say what the talc is used for? Talc and related 16 materials. It just lists tonnages.</p> <p>17 MR. FERGUSON: And I'd like the next 18 list, Exhibit 24 -- 25. My bad.</p> <p>19 (Exhibit 25 was marked for 20 identification.)</p> <p>21 BY MR. FERGUSON:</p> <p>22 Q. The first author is Edward B. Ilgren, 23 I-l-g-r-e-n, correct?</p> <p>24 A. Ilgren, yes.</p> <p>25 Q. And the title is "Analysis of an</p>

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<p>1 Authentic Historical Italian Cosmetic Talc Sample 2 Further Evidence for the Lack of Cancer Risk," correct? 3 A. And analysis of an, implying one, 4 authentic historical Italian. Yes, that's what the 5 title is. 6 Q. Exactly. It does say "an," a-n? 7 A. A single or it's implied that's a single 8 sample. I have not seen this paper before. 9 Q. Can you look with me at the first line of 10 the abstract, where it says, "Italian talc from the 11 Pinerolo Mines in northwest Italy is known for its 12 extreme purity," correct? 13 A. That is what it says. It doesn't say 14 with respect to what, so and then -- so it's an 15 abstract. It should be a summary from introductory 16 materials, so let's see if they discuss that in the 17 introduction. "It is known for its extreme purity. 18 More than 60 years of epidemiological studies have 19 failed to demonstrate any attendant cancer risk." So -- 20 Q. I don't need you to read it out loud. I 21 apologize for interrupting. Obviously, time is limited. 22 You've answered my question, so what we know is that 23 Mr. Newman and Dr. Ilgren disagree with your comment 24 that the Italian talc is not good quality, correct? 25 MS. O'DELL: Object to the form.</p>	<p>1 about his report while you're pulling that up, 2 if you wouldn't mind? 3 MS. O'DELL: Yeah, sure. I've got it 4 right here. 5 BY MR. FERGUSON: 6 Q. Could look at page 31 of your report, 7 Dr. Krekeler? 8 A. I'm at page 31. 9 Q. Are you with me, sir? Okay. Just above 10 the heading of "Toxic Metal Contamination," is a 11 paragraph that starts "In summary." And do you see a 12 sentence there that says, "Defendants admit that the 13 beneficiation process does not remove asbestos"? Do you 14 see that sentence? 15 A. I do see that sentence. 16 Q. And for that proposition, you cite the 17 deposition of Patrick Downey at page 407, pages -- line. 18 Excuse me. Lines 13 through 16, correct? That's what 19 you cited? 20 A. Correct. 21 Q. All right. Let's look, if we may, look 22 at Exhibit 26, and the second -- the first page of that 23 is just the cover page to Mr. Downey's deposition. 24 Could you turn to the second page, and let's look at 25 page 407, lines 13 to 16, which you cited.</p>
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<p>1 A. They can disagree, correct. 2 BY MS. ROSE: 3 Q. At one point in your report on page 13, 4 you say that, "Usually, companies have a dedicated 5 in-house laboratory for these analyses." 6 A. Yes. Oil Dry as an example. There's 7 other companies that have, you know, extensive labs, and 8 also, people rely on third-party labs to check their 9 internal labs. 10 Q. And you're aware that Imerys has had and 11 has a dedicated in-house laboratory as well, correct? 12 A. I believe so, yes. 13 Q. And, in addition, Imerys has had occasion 14 to send samples to third-party laboratories as well, 15 correct? 16 A. Correct. 17 Q. Let me mark for you Exhibit 26 to your 18 deposition, please. 19 (Exhibit 26 was marked for 20 identification.) 21 MS. O'DELL: Let me get that out here. 22 MR. FERGUSON: Sure. No problem. Let me 23 know when you're ready. 24 MS. O'DELL: Yeah. Okay. 25 MR. FERGUSON: Can I ask him a question</p>	<p>1 A. So 407? 2 Q. Yes, sir. 3 A. 13 to 16. Can I have a moment to read 4 the context above it and stuff? 5 Q. Certainly, sir. 6 A. To refresh my memory? 7 Q. Certainly, sir. Ready to go? Got the 8 context? 9 A. Yes. 10 Q. All right. So if we look at lines 13 11 through 16, that is an answer by Mr. Downey where he 12 says, "I don't know if -- I'm not familiar, and I don't 13 know if flotation was intended to remove asbestos, but 14 to my knowledge, our products don't contain asbestos 15 so." Did I read that correctly? 16 A. Yes, you did read that correctly. 17 Q. So, in fact, Mr. Downey is not, as you 18 say, admitting that the beneficiation process does not 19 remove asbestos. Instead, what he says is I don't know 20 if flotation was intended to remove asbestos, correct? 21 A. That's what it says. I took it as -- he 22 said "I don't know" twice, "I'm not familiar." And it 23 says, "I don't know if flotation was intended to remove 24 asbestos." So the text is correct, yes. 25 Q. But you would agree he did not admit that</p>

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<p>1 the beneficiation process does not remove asbestos, 2 correct?</p> <p>3 MS. SCOTT: Objection.</p> <p>4 A. He doesn't know if it was intended or not 5 is how -- that's how I interpret it. Others can 6 interpret it in other ways.</p> <p>7 BY MR. FERGUSON:</p> <p>8 Q. Would you look at the bottom of page 31, 9 please, of your report?</p> <p>10 A. Okay. On page 31. I see it, yes.</p> <p>11 Q. And you see it says, at the bottom, it 12 starts a sentence, "In fact, these chemical elements are 13 inherent properties of talc ore, a fact acknowledged by 14 Julie Pier in her deposition." And then you cite Julie 15 Pier Deposition, page 211, lines six through 13 from the 16 September 12, 2018, session of her deposition. Do you 17 see that?</p> <p>18 A. Yes, I do.</p> <p>19 Q. And could you go to your left and pick up 20 Miss Pier's deposition? And both sessions are there. 21 If you could, look at the -- they're in reverse order, I 22 noticed before, so would you look at the deposition that 23 is the second one in that notebook? It's the second 24 one. It's not the first one because they're in reverse 25 order. That's the September 13 session, I notice, and</p>	<p>1 A. I have -- "I have just a general broad 2 understanding that as it's crushed, an automatic sampler 3 takes a sample at specific time intervals." That's 4 through line 13.</p> <p>5 Q. All right. So would you agree with me 6 that in that portion of the deposition, Ms. Pier does 7 not acknowledge the fact that chemical elements are 8 inherent properties of talc ore, correct?</p> <p>9 A. Correct.</p> <p>10 Q. It doesn't say that at all, does it?</p> <p>11 A. Yeah. I must have made a mistake with 12 the numbering.</p> <p>13 Q. You also state in your report that Imerys 14 admitted in depositions that -- well, let me skip back 15 because I don't have my citation. So let's -- let's 16 move on to another topic. I may come back to that if I 17 have time, okay?</p> <p>18 A. Right. Do you want me to put the Pier 19 deposition away?</p> <p>20 Q. Yeah, for now.</p> <p>21 A. I'll set it aside.</p> <p>22 Q. Yeah. Keep it handy in case we have time 23 to get back to that.</p> <p>24 A. Okay.</p> <p>25 Q. Now, you have taken, as you -- as we</p>
<p style="text-align: center;">Page 295</p> <p>1 you can go all the way past those. There you go.</p> <p>2 A. I'll try not to break the stuff.</p> <p>3 Q. Can we look at page --</p> <p>4 A. You said -- is it 211?</p> <p>5 Q. Yes, sir. Page 211, please, sir.</p> <p>6 A. I turned right to it. 211.</p> <p>7 Q. Okay.</p> <p>8 A. And you're interested in lines 6 through 9 13? Is that your question?</p> <p>10 Q. Right. And what you've asserted is 11 that -- you cite that for the proposition, "In fact, 12 these chemical elements are inherit properties of talc 13 ore, a fact acknowledged by Julie Pier."</p> <p>14 Can you read for me page 211, Lines 6 15 through 13 of the September 12 deposition?</p> <p>16 A. Well, this has to do -- can I first read 17 the context a little bit to refresh myself?</p> <p>18 Q. Right now, I'd like you to read what --</p> <p>19 A. Okay. I can just read the text.</p> <p>20 Q. Yeah, what you cited.</p> <p>21 A. "Well, this has to do with sampling 22 that's done at the operation. I'm thinking that Pat is 23 in -- If you don't know, you can tell me that." 24 Question. "I'm" -- dash dash dash or -- "..."</p> <p>25 Q. Are you past line --</p>	<p style="text-align: center;">Page 297</p> <p>1 discussed earlier, you have taken the report of 2 Drs. Longo and Rigler and relied upon it for your 3 report, correct?</p> <p>4 A. Correct.</p> <p>5 Q. And that has to do with whether there are 6 contaminants in talc that is sold by Imerys and by 7 Johnson & Johnson, correct? That's what they addressed?</p> <p>8 A. Correct.</p> <p>9 Q. Now, are you aware, Dr. Krekeler, that 10 the United States Food & Drug Administration actually 11 performed a survey of talc and body powders and cosmetic 12 raw material talc?</p> <p>13 A. I believe so. I looked at an FDA 14 document on the Internet, and if I remember correctly -- 15 I would want to check -- there was four suppliers that 16 provided talc products, and they did not find any 17 indications or it was nondetects for those many samples. 18 But I also remember that the FDA also said that -- I'd 19 have to look at it for the exact language, but, 20 essentially, the FDA couldn't fully assure that talc is 21 free of asbestos, I think. Do you have that?</p> <p>22 MR. FERGUSON: Yeah. Let's go ahead and 23 mark as Exhibit 27 the FDA survey. 24 (Exhibit 27 was marked for identification.)</p>

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<p>1 A. I don't know if it's exactly the same one 2 that I looked at.</p> <p>3 MR. BILLINGS-KANG: Ken, was the Pier 4 deposition marked at all?</p> <p>5 MR. FERGUSON: No. I didn't mark it. I 6 can mark it.</p> <p>7 MS. SCOTT: 27?</p> <p>8 MR. FERGUSON: Yes.</p> <p>9 A. It's a printed, so it looks like a 10 different format than maybe the one I looked at. The 11 tables look familiar.</p> <p>12 BY MR. FERGUSON:</p> <p>13 Q. So since our time is growing short, if 14 you would, it looks familiar?</p> <p>15 A. Okay. Yeah. I -- I do think it's the 16 one I looked at, I think.</p> <p>17 Q. Go to the second page of the exhibit, and 18 you see that it has a heading and a little chart saying 19 "Cosmetic-grade raw material talc," correct?</p> <p>20 A. The second page, the heading is "How FDA 21 followed up on the latest"?</p> <p>22 Q. Yeah. If you go to the bottom, there's a 23 little chart with a heading that says, "Cosmetic-grade 24 raw material talc," correct?</p> <p>25 A. Yes.</p>	<p>1 Q. Let's call it rows. 2 A. Oh, rows. Okay. All right. 3 Q. Okay. 4 A. So for these seven rows, yes. 5 Q. Okay. 6 A. There's no asbestos detected for those 7 seven samples. 8 Q. Okay. And if we go to the 9 second-to-the-last page of that exhibit -- in fact, it's 10 the last page that has typing on it. 11 A. The second-to-the-last page. 12 Q. Are you there? 13 A. Okay. 14 Q. Do you see there's a column that is or a 15 chart that is entitled "Body Powder," correct? 16 A. Correct. 17 Q. And there's a line, a row for Johnson's 18 Baby Powder, correct? 19 A. Correct. 20 Q. That says no asbestos detected by PLM or 21 by TEM, correct? 22 A. Correct. 23 Q. And a row for Shower or Shower, Morning 24 Fresh Absorbent Body Powder that likewise says no 25 asbestos detected by PLM and TEM, correct?</p>
<p style="text-align: center;">Page 299</p> <p>1 Q. And you see under "Supplier," it says, 2 "Rio Tinto Minerals/Luzenac America," correct? 3 A. Correct. 4 Q. And if you look at that and the next 5 page, there are seven lots that were tested from Rio 6 Tinto Minerals/Luzenac America, correct? 7 A. One, two, three, four. Yes. Seven? 8 Q. Yes, sir. 9 A. From Rio Tinto. 10 Q. Okay. And there's a column for 11 "Percentage Asbestos by PLM." That's polarized light 12 microscopy, correct? 13 A. Yes. There's a column for that. 14 Q. And there's a percentage asbestos by TEM 15 or transmission electron microscope, correct? 16 A. Yes. There's a column for that. 17 Q. Okay. And in all 14 columns, it notes no 18 asbestos detected, correct? 19 MS. O'DELL: Objection. 20 A. Fourteen columns? 21 BY MS. ROSE: 22 Q. Well, there's seven for PLM, seven for 23 TEM? 24 A. Oh, you mean rows or 14 columns? One, 25 two, three, four, five columns.</p>	<p style="text-align: center;">Page 301</p> <p>1 A. At the very bottom, yes. 2 Q. So in this Food & Drug Administration 3 survey that was done, the results were different than 4 the ones that Drs. Longo and Rigler came up with, 5 correct? 6 MS. O'DELL: Object to the form. 7 A. Well, it's not the same sample size. 8 And, yeah, this is the same report. As it says, "For 9 these reasons, while FDA finds these results 10 informative, they do not prove that most or all talc or 11 talc-containing cosmetic products currently marketed in 12 the United States are likely to be free of asbestos 13 contamination. As always, when potential" -- yeah. 14 This is, yeah. This is the, yeah. 15 BY MS. ROSE: 16 Q. But we know that they tested Luzenac, raw 17 material talc and Johnson & Johnson body powder, 18 correct? 19 A. Correct. Yes. 20 MR. FERGUSON: What are we doing on time, 21 if you wouldn't mind letting me know? 22 VIDEOGRAPHER: You've been on record six 23 hours and 51 minutes. 24 MR. FERGUSON: I've got a few minutes. 25 MR. BILLINGS-KANG: Plenty of time.</p>

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<p>1 MR. FERGUSON: Plenty of time. 2 THE WITNESS: Are we done with this one? 3 MR. FERGUSON: Yes, sir. We're done with 4 that one. 5 BY MS. ROSE: 6 Q. Let me ask you one more area, one more 7 area, and then I'll quit. 8 MR. BILLINGS-KANG: I'm going to give him 9 my time. 10 MR. FERGUSON: Okay. 11 MR. CARY: Time for the gentleman from 12 Texas. 13 MS. O'DELL: It's like we're in the 14 Senate or House. 15 MR. FERGUSON: The House. I hope not. 16 MR. FROST: Won't do too well for that. 17 MS. SCOTT: I was just going to say the 18 same thing. 19 BY MR. FERGUSON: 20 Q. Could you get the IARC 93 monograph, 21 which I believe is Exhibit 5? 22 A. IARC 93. IARC 93. Yep. Exhibit 5, yes. 23 Q. All right. 24 MR. FERGUSON: And I'm sorry, Leigh and 25 Carmen, do you guys have? Okay.</p>	<p>1 jet mills and are classified and separated from other 2 minerals by froth flotation or magnetic separation," 3 correct? 4 A. Yes. And there's no citation for that. 5 Q. And the IARC working group does note that 6 the techniques by which top ores may be processed 7 include hand sorting, correct? 8 A. Correct, yes. That's in the second line 9 on the paragraph. That's what they say. Again, it's 10 not cited, so I'm not sure where they get the 11 information from, but they say that. 12 MR. FERGUSON: Can we go off for one 13 second? I know we're almost done, please. 14 VIDEOGRAPHER: We're now going off 15 record. The time is 7:05. 16 (Off the record.) 17 VIDEOGRAPHER: We are now back on record. 18 The time is 7:07. 19 BY MR. FERGUSON: 20 Q. Dr. Krekeler, could you turn to page 42 21 of your report? 22 A. 42 of my report? 23 Q. Yes, sir. 24 A. 42. 25 Q. Not of the IARC.</p>
<p>1 MS. O'DELL: What page? 2 MR. FERGUSON: I am going to be looking 3 at page 286. 4 BY MR. FERGUSON: 5 Q. Can you find page 286? 6 A. 286. 285, 286. I found it. 7 Q. At the top of page 286, the section -- 8 and, again, this is from the IARC monograph, correct? 9 A. Correct. 10 Q. That you discussed earlier and you've 11 cited in your report, correct? 12 MS. O'DELL: Objection. Cites the 13 monograph, but you're saying he cites this. 14 It's a little confusing. 15 MR. FERGUSON: I apologize. 16 BY MR. FERGUSON: 17 Q. You've cited this monograph, not 18 necessarily this portion of it? 19 A. Correct. Yeah. I've cited the 20 monograph. 21 Q. So let's look at the first paragraph 22 there on page 286. You see it says, "Talc ores may be 23 processed by a variety of techniques that include 24 selective mining, hand sorting and milling by roller 25 mills, hammer mills, ball mills, fluid energy mills and</p>	<p>1 A. Oh, I thought we were still talking about 2 that. I'm sorry. 3 Q. No. I apologize. Of your report? 4 A. Okay. 5 Q. Okay? 6 A. Yep. 7 Q. Are you there? 8 A. Yes. 9 Q. Okay. So if you look at the last 10 paragraph on page 42 about -- 11 A. Grinding? 12 Q. That paragraph. 13 A. Yep. 14 Q. But if you look at the fifth line of 15 that, you see where it starts, "Imerys admitted," and it 16 goes on to say, "Imerys admitted, in deposition, that a 17 phyllosilicate sample could be ground to a near 18 amorphous state, damaging the sample, even with minimal 19 grinding." Correct? Did I read that correctly? 20 A. Yes. That is correct. 21 Q. And then you cite the Julie Pier 22 deposition, page 25, 23 to 25, and page 26, 1 through 23 23, September 23rd, 2018? Correct? 24 A. Correct. 25 Q. And so would you pick up again the Julie</p>

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<p>1 Pier notebook to your left? And this time, we're 2 looking at the first deposition in the notebook because 3 they're reversed, and that's the September 13th, 2018, 4 date. So would you turn to page 25 in that 5 deposition --</p> <p>6 A. This starts at page 340.</p> <p>7 Q. Yes, it does.</p> <p>8 A. So page --</p> <p>9 Q. Would you with agree with me there is no 10 page 25 and no page 26 in the Julie Pier deposition 11 transcript from September 13th, 2018?</p> <p>12 A. I don't know.</p> <p>13 Q. Well --</p> <p>14 A. Let's look and see.</p> <p>15 Q. You have the deposition transcript in 16 front of you, sir.</p> <p>17 A. Is that -- I don't remember if it's a one 18 or two volume. Some of these, I think, were two volume.</p> <p>19 Q. Well, sir --</p> <p>20 A. So I think if -- yeah, I don't remember 21 specifically, but if this is --</p> <p>22 Q. Why don't you look at the very first 23 page.</p> <p>24 A. The first page says 340. This is the 25 page number.</p>	<p>1 Q. Well, those pages weren't missing. The 2 words that you quoted were not just not on them, 3 correct?</p> <p>4 MS. SCOTT: Objection.</p> <p>5 A. It's unclear.</p> <p>6 BY MR. FERGUSON:</p> <p>7 Q. Do you think maybe this is another 8 mistake or typo?</p> <p>9 A. I don't know.</p> <p>10 MR. FERGUSON: That's all I have, 11 Dr. Krekeler. Thank you for your time, sir.</p> <p>12 VIDEOGRAPHER: Do you want to go off?</p> <p>13 MS. O'DELL: James, are you okay?</p> <p>14 MR. BILLINGS-KANG: I'm fine. Thank you.</p> <p>15 MS. O'DELL: How much time on the record?</p> <p>16 VIDEOGRAPHER: Seven hours even.</p> <p>17 MS. O'DELL: Let's go take a break.</p> <p>18 MR. FROST: Look at that.</p> <p>19 VIDEOGRAPHER: We are going off record.</p> <p>20 The time is 7:13. (A recess was taken from 7:13 to 7:47.)</p> <p>21 VIDEOGRAPHER: We are now back on record.</p> <p>22 The time is 7:47.</p> <p>23 EXAMINATION</p>
<p style="text-align: center;">Page 307</p> <p>1 Q. Look at the very first page there that 2 you're looking at there, and does that say Julie Pier's 3 deposition from September 13th of 2018?</p> <p>4 A. Actually, on this page, there is not -- 5 oh, September 13th, 2018.</p> <p>6 Q. And just as you told us, there is no page 7 25 or page 26 for the September 13, 2018, deposition of 8 Julie Pier, is there?</p> <p>9 A. In this printed copy, there appears not 10 to be. I don't --</p> <p>11 Q. So --</p> <p>12 A. Can I check to see if it's confused by -- 13 just double-check? I might have.</p> <p>14 Q. Do you want to check the September 12th 15 version and see?</p> <p>16 A. Yeah. I don't know if I've confused 17 things or not. So we're looking at --</p> <p>18 Q. Page 25 and page 26.</p> <p>19 A. 25 and 26.</p> <p>20 Q. She is not talking about phyllosilicates 21 on pages 25 or 26 of the September 12th, is she?</p> <p>22 A. Correct. I currently don't have an 23 explanation for the apparent discrepancy.</p> <p>24 Q. Do you think since --</p> <p>25 A. I don't know if pages are missing or...</p>	<p style="text-align: center;">Page 309</p> <p>1 BY MS. O'DELL:</p> <p>2 Q. Dr. Krekeler, good evening. I've got a 3 few questions for you to follow up.</p> <p>4 A. Okay.</p> <p>5 Q. First, you were asked a number of 6 questions about Italian talc and the talc ore deposits 7 in Italy. Do you recall those questions?</p> <p>8 A. Generally, yes.</p> <p>9 Q. And, in fact, you were handed a binder of 10 a documents that I think are in front of you now that -- 11 they were marked as Exhibit 14.</p> <p>12 A. Exhibit -- yes.</p> <p>13 Q. And they related to certain documents 14 regarding talc formations in Italy. Do you recall those 15 documents?</p> <p>16 A. Correct.</p> <p>17 Q. And specifically in terms of the Italian 18 ore bodies, were there positive tests of asbestos in 19 Italian talc that you reviewed in reaching your opinions 20 in this case?</p> <p>21 MR. FROST: Objection to form.</p> <p>22 A. Yes.</p> <p>23 BY MS. O'DELL:</p> <p>24 Q. And, in fact, if you'll turn to page -- I 25 think it was 14 of your report. Do you see that?</p>

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<p>1 A. Yes.</p> <p>2 Q. And are the test results depicted on page</p> <p>3 14 -- well, let me just ask you this way. Where did the</p> <p>4 test results depicted in the table on page 14 of your</p> <p>5 expert report, where did they originate from?</p> <p>6 A. There are five examples from 1957 to '58</p> <p>7 from Italy.</p> <p>8 Q. And you were also handed by Mr. Ferguson</p> <p>9 what's been marked as Exhibit 25. I don't recall if you</p> <p>10 recall a document entitled, "Analysis of an Authentic</p> <p>11 Historical --</p> <p>12 A. Yes.</p> <p>13 Q. -- "Italian Cosmetic Talc Sample." Do</p> <p>14 you recall that?</p> <p>15 A. Yep.</p> <p>16 Q. Do you have it in front of you?</p> <p>17 A. Yes.</p> <p>18 Q. And Mr. Ferguson asked you to read the</p> <p>19 first sentence of the abstract which addressed "the</p> <p>20 extreme purity" of Italian talc. Do you recall that?</p> <p>21 A. Correct. Yes, I do.</p> <p>22 Q. Did this report that's been marked as</p> <p>23 Exhibit 5 actually report the presence of tremolite</p> <p>24 fibers in Italian talc?</p> <p>25 A. Yes. There's -- it reports the numerical</p>	<p>1 BY MS. O'DELL:</p> <p>2 Q. In fact, at the top, in the first full</p> <p>3 paragraph, it says, "The TEM micrograph in Figure B1</p> <p>4 shows a number of platy talc particles. Figure B-2</p> <p>5 shows platy talc particles and an elongated fragment of</p> <p>6 talc."</p> <p>7 A. Of talc. Two -- yeah. "Two other</p> <p>8 tremolite fibers were detected," and then it restates</p> <p>9 that numerical concentration of tremolite fibers in talc</p> <p>10 was the number that I mentioned previously.</p> <p>11 BY MS. O'DELL:</p> <p>12 Q. And so does, in fact, Exhibit 25 support</p> <p>13 your opinion that Italian talc is contaminated with</p> <p>14 asbestos?</p> <p>15 MR. BILLINGS-KANG: Objection to form.</p> <p>16 MR. FROST: Objection to form.</p> <p>17 BY MS. O'DELL:</p> <p>18 Q. Now, let me ask you to turn to your</p> <p>19 report specifically. Oh, one question. You were asked</p> <p>20 a few questions today about the beneficiation process,</p> <p>21 and if there is asbestos fibers present in talc ore, is</p> <p>22 there anything in the beneficiation process that you</p> <p>23 would expect to remove the asbestos fibers from the</p> <p>24 talc?</p> <p>25 A. Not efficiently.</p>
<p style="text-align: center;">Page 311</p> <p>1 concentration of tremolite fibers in the talc sample was</p> <p>2 3.67 -- 3.687 times 10 to the negative 6 fibers per</p> <p>3 gram, so that is over 3 million fibers per gram</p> <p>4 corresponding to a mass concentration of .722 parts per</p> <p>5 million.</p> <p>6 Q. And if you'll turn to page 3 of this</p> <p>7 exhibit --</p> <p>8 MR. FROST: Leigh, what exhibit is this?</p> <p>9 MS. O'DELL: 25.</p> <p>10 MR. FROST: 25. Okay.</p> <p>11 MS. O'DELL: It's what Ken marked.</p> <p>12 MR. FROST: Oh, I thought you said five.</p> <p>13 I apologize.</p> <p>14 MS. O'DELL: Did I? Sorry. Thank you.</p> <p>15 MR. BILLINGS-KANG: You said five.</p> <p>16 MS. O'DELL: I don't think you heard the</p> <p>17 two, but 25 is what I'm referring to.</p> <p>18 MR. FROST: Thank you.</p> <p>19 BY MS. O'DELL:</p> <p>20 Q. On page 3 of the exhibit, Dr. Krekeler,</p> <p>21 did the authors of this report also report the presence</p> <p>22 of fibrous talc in this particular sample?</p> <p>23 MR. BILLINGS-KANG: Object to form.</p> <p>24 A. Yes. I believe I saw it in here.</p>	<p style="text-align: center;">Page 313</p> <p>1 Q. Let me ask you to turn to page 35 of your</p> <p>2 report. Actually, 36.</p> <p>3 A. Okay. I'm on page 36.</p> <p>4 Q. And, actually, you can look at, actually,</p> <p>5 either 35 or 36, but are the test results and the</p> <p>6 samples that are of the samples reported in the table on</p> <p>7 page 35, and do many of them include the results of</p> <p>8 annual composite samples?</p> <p>9 A. Yes.</p> <p>10 Q. And are -- what are annual composite</p> <p>11 samples?</p> <p>12 A. They are, essentially, talcum powder</p> <p>13 that's ready to go as a consumer product, essentially a</p> <p>14 consumer product.</p> <p>15 Q. And annual samples would be composed of</p> <p>16 processed talc?</p> <p>17 A. Yes.</p> <p>18 Q. And let me ask you to look at page 36,</p> <p>19 where you report some of the findings regarding</p> <p>20 chromium. Did Johnson & Johnson conduct testing of its</p> <p>21 talc powder that was specific enough to identify whether</p> <p>22 the type of chromium contained was either hexavalent</p> <p>23 chromium or trivalent chromium?</p> <p>24 MR. BILLINGS-KANG: Objection to form.</p> <p>25 MR. FROST: Objection to form.</p>

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<p>1 A. No. I saw no evidence of any testing to 2 determine whether chromium was in the three-plus state 3 or the six-plus state.</p> <p>4 MR. FROST: Move to strike the response 5 as speculative.</p> <p>6 BY MS. O'DELL:</p> <p>7 Q. Is that also true -- is that also true of 8 the testing that was conducted by Imerys?</p> <p>9 MR. FROST: Objection to form.</p> <p>10 A. I'm sorry. Can you repeat the question?</p> <p>11 BY MS. O'DELL:</p> <p>12 Q. Is that -- is that also true of the 13 testing that was conducted by Imerys regarding chromium?</p> <p>14 MR. FROST: Same objection.</p> <p>15 A. Yes.</p> <p>16 BY MS. O'DELL:</p> <p>17 Q. You were asked a number of questions 18 regarding the ore deposits in Vermont. Do you recall 19 those questions?</p> <p>20 A. Yes.</p> <p>21 Q. And you -- one of the exhibits that was 22 marked in regard to Vermont was the Ross commentary that 23 you cited, and I believe it's in front of you. What's 24 the exhibit number, please?</p> <p>25 A. Twelve, I think.</p>	<p>1 geologic terrain.</p> <p>2 Q. And in the comments that are included in 3 the Ross paper would cover the geologic formations that 4 were used to source Johnson & Johnson's talcum powder in 5 Vermont?</p> <p>6 A. Yes.</p> <p>7 MR. FROST: Objection to form. Calls for 8 speculation.</p> <p>9 BY MS. O'DELL:</p> <p>10 Q. Let me ask you to turn to Exhibit 11, 11 which should be right --</p> <p>12 A. Eleven.</p> <p>13 Q. -- in front of you there.</p> <p>14 A. Yes.</p> <p>15 Q. And if you'll turn to page 2 of --</p> <p>16 A. Page 921 in the article?</p> <p>17 Q. Yes. Let me ask you, with the 18 constituents of the geology, geologic formation that is 19 described in Ross, and we'll get to it, but, also, in 20 Van Gosen, would those constituents, as described in 21 those publications, be the same or similar to the mines 22 in Vermont that were used to source Johnson & Johnson's 23 talcum powder?</p> <p>24 MR. FROST: Objection to form.</p> <p>25 A. Yes.</p>
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<p>1 Q. Okay.</p> <p>2 A. That's correct.</p> <p>3 Q. And Exhibit 12 was a reference that you 4 cited in your report?</p> <p>5 A. Correct.</p> <p>6 Q. And is the Ross commentary supportive of 7 your opinions?</p> <p>8 A. Yes.</p> <p>9 Q. Why?</p> <p>10 A. So, essentially, end of second column, 11 "Ultramafic talc deposits of Vermont offer a third 12 example of the complexities of rock formations 13 containing asbestos minerals. The core of the 14 ultramafic bodies is off a serpentine rock derived from 15 a hydrothermal alteration of a pre-existing pyroxene and 16 olivine-rich ultramafic rock. The serpentine core often 17 grades outward into talc-serpentine-carbonate rock, then 18 steatite (massive talc ore containing often small 19 amounts of serpentine), then 'blackwall' rock (contains 20 amphiboles, chlorite, quartz, albite, et cetera), and 21 finally the country rock. Equivalent ultramafic bodies 22 in Quebec, Canada, form some of the world's largest 23 chrysotile deposits."</p> <p>24 So, essentially, this is all the talc 25 mines are all part of this one essentially extensive</p>	<p>1 BY MS. O'DELL:</p> <p>2 Q. Let me ask you to turn specifically to 3 Van Gosen, which we've marked as Exhibit 11 and 4 specifically ask you to turn to page 933.</p> <p>5 A. Okay. Yes.</p> <p>6 Q. Does page 933 begin a description of 7 Vermont talc?</p> <p>8 A. Yes, it does.</p> <p>9 Q. Does this description by Van Gosen apply 10 to the, or is it relevant to the geology of the talc 11 mines that were used to source J&J talc?</p> <p>12 A. Yes, it is.</p> <p>13 MR. FROST: Objection. Calls for 14 speculation.</p> <p>15 BY MS. O'DELL:</p> <p>16 Q. And if you'll turn to page 934, what is 17 the description of the Vermont talc geology that Van 18 Gosen includes in his article?</p> <p>19 A. So, sorry. On the previous page, the 20 alteration of zones are typically compromised by 21 sequence, provides details --</p> <p>22 Q. Doctor, read more clearly for the court 23 reporter, please.</p> <p>24 A. "Ultramafic rocks, grading to a 25 talc-carbonate-dominant zone, grading to a nearly</p>

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<p>1 mono-mineralogical ... zone," all these other rich 2 zones, Items 1 through 7. And then "Black-wall talc 3 deposits are associated spatially with serpentinite 4 masses that, in some areas, host well-developed 5 chrysotile asbestos." And there's citations from 1942 6 and '63.</p> <p>7 BY MS. O'DELL:</p> <p>8 Q. Okay. And did it also say that some of 9 the alteration zones contain actinolite, tremolite and 10 anthophyllite?</p> <p>11 A. Yes.</p> <p>12 Q. And does the Van Gosen article support 13 your opinions in this case?</p> <p>14 MR. FROST: Objection. Calls for 15 speculation.</p> <p>16 A. Yes.</p> <p>17 BY MS. O'DELL:</p> <p>18 Q. Let me ask you now to turn to Exhibit 15, 19 which also should be in front of you.</p> <p>20 A. Fifteen.</p> <p>21 Q. It's the Chidester --</p> <p>22 A. Fourteen.</p> <p>23 Q. Fifteen.</p> <p>24 A. Okay.</p> <p>25 Q. So the Chidester article that was</p>	<p>1 A. I had it somewhere. Yeah, 18. Yes. 2 Q. And if you'll turn in Exhibit 18 to page 3 11, is this a document that you relied on in reaching 4 your opinions?</p> <p>5 A. Yes. I'll get to page --</p> <p>6 Q. Page 11.</p> <p>7 A. Page 11, "Elemental Scan" at the top.</p> <p>8 Q. And does this page address the presence 9 of certain heavy metals in Chinese talc deposits?</p> <p>10 A. Yes.</p> <p>11 Q. And what metals specifically were 12 elevated?</p> <p>13 A. Titanium.</p> <p>14 Q. And based on this document, does the 15 writer include a comment below regarding the need to -- 16 well, let me just say for the writer's comments below 17 regarding the presence?</p> <p>18 A. "This very sophisticated analysis shows a 19 relatively wide array of elements in subtrace levels. 20 Other high grade talcs can show a similar array. The 21 analysis represents research information, which should 22 be conducted on a periodic basis to anticipate any 23 mineral contamination in future assessments of other 24 exposures of talc in the district."</p> <p>25 Q. Let me ask you to put that aside, please,</p>
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<p>1 referenced earlier, and I'll ask you to turn to page 28. 2 If you'll turn --</p> <p>3 A. I am on page 28.</p> <p>4 Q. Right. And does page 28 relate to the 5 Hammondsville talc mine?</p> <p>6 A. Yes, it does.</p> <p>7 Q. And was the Hammondsville talc mine one 8 of the mines that was used to source Johnson & Johnson's 9 talc?</p> <p>10 A. Yes.</p> <p>11 Q. And if you'll look on the right-hand 12 side, on the second paragraph, do you see that?</p> <p>13 A. Yeah. "The deposit consists entirely of 14 coarse, flakey grit and of steatite. No serpentinite 15 has been found. In the southwestern face of the quarry, 16 there is a large mass of actinolite rock."</p> <p>17 Q. Does that support your opinions in this 18 case?</p> <p>19 A. Yes.</p> <p>20 MR. FROST: Objection. Form.</p> <p>21 BY MS. O'DELL:</p> <p>22 Q. Let me ask you to set that aside and turn 23 to Exhibit 18. It's the document, the "Preliminary 24 Investigation of Cosmetic Talc Potential" in China, 25 Kwangsi, China. I think you had it in front of you.</p>	<p>1 sir. Thank you.</p> <p>2 If you'll turn now to the IARC monograph, 3 which I think is on the '93 monograph, which is right 4 there. Yes.</p> <p>5 A. This? Five?</p> <p>6 Q. That's right, Exhibit 5.</p> <p>7 A. Okay.</p> <p>8 Q. You were asked a number of questions 9 about a statement that you made in your report about, I 10 think along the lines of it was common to find minerals 11 such as tremolite, anthophyllite, asbestos in talc 12 deposits. Do you recall those lines of questions?</p> <p>13 A. Yes.</p> <p>14 Q. And if you'll turn to page 284 of the 15 IARC monograph, 284, and this is the '93 monograph that 16 relates to talc not containing asbestos fibers. If 17 you look at the bottom of 284, what does it say in the 18 IARC monograph regarding the presence of these minerals 19 in talc deposits?</p> <p>20 A. It discusses minerals associated with 21 talc. "The most common minerals found in talc products 22 include chlorite, magnesite, dolomite, tremolite 23 anthophyllite, serpentine and quartz."</p> <p>24 Q. And if you'll turn over to page 285, that 25 statement is further supported in Table 1.4?</p>

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1	A. Yes. 2 MR. FROST: Object to form. 3 A. Tremolite is listed, anthophyllite is 4 listed, actinolite is listed. 5 BY MS. O'DELL: 6 Q. And is that supportive of your opinion 7 that those asbestos minerals are common in talc 8 deposits? 9 A. Yes. 10 MR. FROST: Objection to form. 11 BY MS. O'DELL: 12 Q. Let me ask you just a general question 13 first. How would you define fibrous talc? 14 A. Fibrous talc is a talc particle that has 15 a morphology consistent with the definition of a fiber. 16 Q. And would it be fair to say that fibrous 17 talc could be defined as talc formed in an asbestosiform 18 habit? 19 MR. BILLINGS-KANG: Objection to form. 20 MR. FROST: Objection to form. 21 A. Yes. 22 BY MS. O'DELL: 23 Q. Let me ask you to look at Exhibit 22, 24 Dr. Krekeler, which I think I had in front of you. It 25 may be.	1 BY MS. O'DELL: 2 Q. Dr. Krekeler, describe for us the 3 methodology that you've used in reaching your opinions 4 in this case. 5 A. I evaluated data, I evaluated x-ray 6 diffraction data, I evaluated core data, I evaluated 7 electron microscopy data, I evaluated bulk chemistry 8 data, I evaluated descriptions, I used peer-review 9 literature, and these are essentially methods that would 10 be expected if I was working as a consultant in a 11 company. 12 Q. Did you rely on published books regarding 13 the geology of Vermont, Italy and China? 14 A. Yes. 15 Q. To the degree they were available? 16 A. To the degree, yes. I would agree with 17 that. 18 Q. Is another common source that geologists 19 rely on publications such as the U.S. Geological Survey? 20 A. Yes. 21 Q. And are there also publications from the 22 U.S. Bureau of Mines? 23 A. Yes. 24 Q. And did you rely on those types of 25 materials in reaching your opinions in this case?
1	A. Twenty-two? 2 Q. Yes. 3 A. Okay. 4 Q. And I would like for you -- you recall 5 there was a number of documents that Mr. Frost showed 6 you regarding six asbestos test results that were 7 contained in the asbestos chart in your report beginning 8 at page 14. Do you recall those questions? 9 A. Yes. 10 Q. And if I marked them correctly, Mr. Frost 11 pointed out one, two, three, four, five, six test 12 results that he took issue with. Do you recall that? 13 A. Yes. 14 Q. How many positive test results, just 15 estimate if you don't know -- 16 A. Approximately 125. 17 Q. So let me -- and so let me ask you this 18 question. Is there anything that you heard today that, 19 in your mind, would call into question the veracity of 20 the test results that, the other 125 test results that 21 you reported in the chart, which begins in your report 22 on page 14? 23 MR. FROST: Objection to form. 24 A. No. 25	1 A. Yes. 2 Q. Is the methodology that you used 3 methodology that would be generally acceptable in the 4 field of geology? 5 A. Yes. 6 MR. FROST: Objection to form. 7 BY MS. O'DELL: 8 Q. Did you rely on peer-reviewed literature 9 to support your opinions? 10 A. Yes. 11 Q. Is peer-reviewed literature always 12 available for specific mineral formations or deposits in 13 geology? 14 A. Not necessarily. 15 Q. You were asked about the documents that 16 you had received, internal documents that you had 17 received in formulating your opinions in this case. 18 Obviously, corporate documents were not available to you 19 other than lawyers giving them to you, fair? 20 A. Yes. Correct. 21 Q. You didn't have an independent way to get 22 the documents from Johnson & Johnson or Imerys in order 23 to reach your opinions, right? 24 A. Correct. 25 Q. And did you feel that you had adequate
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<p>1 materials to support the opinions contained in your 2 report?</p> <p>3 MR. FROST: Objection to form.</p> <p>4 MR. BILLINGS-KANG: Objection to form.</p> <p>5 A. Yes.</p> <p>6 BY MS. O'DELL:</p> <p>7 Q. In terms of the testing documents that 8 are mentioned and reported in your expert report, are 9 testing documents something that you rely on in the 10 normal course of your role as a geologist?</p> <p>11 A. Yes.</p> <p>12 Q. Would that also be true of core logs?</p> <p>13 A. Yes.</p> <p>14 Q. And those are some of the documents that 15 you cited in your report?</p> <p>16 A. Yes.</p> <p>17 Q. Let me ask you just to talk just briefly 18 about your qualifications as a geologist. As a 19 geologist, are you -- do you teach the process of 20 evaluating mineral deposits?</p> <p>21 A. Yes. I teach a course on ore deposits, 22 and I've taught courses on industrial mineralogy and 23 I've taught --</p> <p>24 Q. Excuse me.</p> <p>25 A. When I was at George Mason, I would</p>	<p>1 particular order, but if we can first turn to the IARC 2 monograph. It's the one right in front of you there. 3 Which exhibit number is that?</p> <p>4 A. I'm sorry. What?</p> <p>5 Q. Which exhibit number is that?</p> <p>6 A. Five.</p> <p>7 Q. Okay. If you can turn to page 284.</p> <p>8 A. Okay.</p> <p>9 Q. So if you look at the bottom of the page, 10 Miss O'Dell had you read from the line starting, "The 11 most common minerals found in talc products," but before 12 that, it reads, "Because talc deposits are formed from 13 different protoliths under many different geological 14 conditions, each talc deposit has a combination of 15 mineralogy and mineral habit that is distinctive and, in 16 many cases, unique." Did I read that correctly?</p> <p>17 A. There's no citation for that and, yes, 18 you did.</p> <p>19 Q. Sir, my question is: Did I read that 20 correctly?</p> <p>21 A. Yes.</p> <p>22 Q. And that's what the IARC monograph says, 23 correct?</p> <p>24 A. Correct.</p> <p>25 Q. If you can turn to the Van Gosen article,</p>
<p>1 regularly teach mineralogy.</p> <p>2 Q. And would those courses have included 3 teaching students how to conduct exploration such as 4 drilling, core drilling and other ways to define an ore 5 deposit?</p> <p>6 A. Yes.</p> <p>7 MR. FROST: Object to form.</p> <p>8 BY MS. O'DELL:</p> <p>9 Q. Have you given presentations on those 10 types of activities?</p> <p>11 A. Yes.</p> <p>12 MS. O'DELL: Okay. I don't have anything 13 further. Thank you.</p> <p>14 THE WITNESS: Okay.</p> <p>15 MR. FROST: Could we go off the record?</p> <p>16 VIDEOGRAPHER: Sure. We are now going 17 off record, and the time is 8:13.</p> <p>18 (A recess was taken from 8:13 to 8:20.)</p> <p>19 VIDEOGRAPHER: We are now back on record</p> <p>20 and the time is 8:20.</p> <p>21 FURTHER CROSS-EXAMINATION</p> <p>22 BY MR. FROST:</p> <p>23 Q. All right, Doctor. A couple quick 24 follow-ups, and unfortunately, I'm going to run them in 25 the order they're in my binder, which probably is no</p>	<p>1 which is Exhibit 11.</p> <p>2 A. Okay.</p> <p>3 Q. Page 934.</p> <p>4 A. All right. I'm on that page.</p> <p>5 Q. Before, when you were reading this, you 6 skipped over most of Number 3. Number 3 reads, "a 7 nearly mono-mineralogical talc zone (often of high 8 purity) several centimeters to meters thick." Did I 9 read that correctly?</p> <p>10 A. Yes.</p> <p>11 Q. Do you agree with me that that would be 12 the talc ore zone, correct?</p> <p>13 MS. O'DELL: Object to the form.</p> <p>14 A. Presumably. A nearly -- a nearly 15 monomineralic -- mineralogical talc zone.</p> <p>16 BY MR. FROST:</p> <p>17 Q. Now, if we can turn to Exhibit 15, which 18 is the Chidester article -- Chidester.</p> <p>19 A. 215.</p> <p>20 Q. And specifically page 28. Okay. Counsel 21 had pointed you to the second paragraph, the second 22 column down, and you read the, "In the southwest face of 23 the quarry, there is large mass of actinolite rock," 24 correct?</p> <p>25 A. Correct.</p>

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<p>1 Q. It doesn't say here that it's asbestos 2 actinolite, correct? 3 A. It does not specifically say that it's 4 asbestos. 5 Q. And you couldn't, without speculating, 6 based on this document, say whether or not it's 7 asbestos, correct? 8 MS. O'DELL: Object to the form. 9 A. I would agree. 10 BY MR. FROST: 11 Q. And then the sentence before that, the 12 end of it reads, No serpentine has been found; is that 13 correct? 14 A. No. It says, "No serpentinite." 15 Q. "No serpentinite," sorry, "has been 16 found"? 17 A. "Has been found." 18 Q. Okay. Sorry. I did read it incorrectly. 19 You are right. So "No serpentinite has been found"? 20 That's correct? 21 A. Correct. 22 MR. FROST: That's all questions I have, 23 sir. 24 VIDEOGRAPHER: Is that it? 25 MR. FERGUSON: I don't have any</p>	<p>1 C E R T I F I C A T E 2 State of Ohio : 3 : SS 4 County of Hamilton : 5 I, Susan M. Gee, RMR, CRR, the undersigned, a 6 duly commissioned notary public within and for the State 7 of Ohio, do hereby certify that before the giving of his 8 aforesaid deposition, MARK KREKELER, Ph.D., was by me 9 first duly sworn to depose the truth, the whole truth 10 and nothing but the truth; that the foregoing is the 11 deposition given at said time and place by MARK 12 KREKELER, Ph.D.; that said deposition was taken in all 13 respects pursuant to stipulations of counsel; that I am 14 neither a relative of nor employee of any of their 15 parties or their counsel, and have no interest whatever 16 in the result of the action; that I am not, nor is the 17 court reporting firm with which I am affiliated, under a 18 contract as defined in Civil Rule 28(D). 19 IN WITNESS WHEREOF, I have hereunto set my 20 hand and official seal of office at Cincinnati, Ohio, on 21 this 29th day of January, 2019. 22 23 My commission expires: S/ Susan M. Gee, RMR, CRR 24 September 20, 2020. Notary Public - State of Ohio 25</p>
<p>1 questions. 2 MS. O'DELL: I have nothing further. 3 MR. FROST: All right. 4 VIDEOGRAPHER: This adjourns the 5 deposition of Dr. Mark Krekeler. We are now 6 going off record, and the time is 8:24. 7 COURT REPORTER: What about signature? 8 MS. O'DELL: Yes. 9 (Exhibit 28 through 30 were marked for 10 identification.) 11 - - - 12 DEPOSITION CONCLUDED AT 8:34 P.M. 13 - - - 14 15 16 17 18 19 20 21 22 23 24 25</p>	<p>1 2 3 DECLARATION UNDER PENALTY OF PERJURY 4 5 Case Name: Talcum Powder Litigation 6 Name of Witness: Mark Krekeler, Ph.D. 7 Date of Deposition: January 25, 2019 8 9 I, MARK KREKELER, Ph.D., hereby certify under 10 penalty of perjury under the laws of the State of 11 _____ that the foregoing is true and correct. 12 Executed this _____ day of 13 _____, 2019, at _____ 14 15 16 17 18 19 20 21 22 23 24 25</p>

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1 DEPOSITION ERRATA SHEET
2 Case Name: Talcum Powder Litigation
Name of Witness: Mark Krekeler, Ph.D.
3 Date of Deposition: January 25, 2019
Reason Codes: 1. To clarify the record.
4 2. To conform to the facts.
3. To correct transcription errors.

5
6 Page _____ Line _____ Reason _____
7 From _____ to _____
8 Page _____ Line _____ Reason _____
9 From _____ to _____
10 Page _____ Line _____ Reason _____
11 From _____ to _____
12 Page _____ Line _____ Reason _____
13 From _____ to _____
14 Page _____ Line _____ Reason _____
15 From _____ to _____
16 Page _____ Line _____ Reason _____
17 From _____ to _____
18 Page _____ Line _____ Reason _____
19 From _____ to _____
20 _____ Subject to the above changes, I certify that
the transcript is true and correct.
21 _____ No changes have been made. I certify that the
transcript is true and correct.

22
23 MARK KREKELER, Ph.D.
24
25

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